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EDICAL RESEARCH IN ITS RELATION TO MEDICAL SCHOOLS*

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One of the striking features of the phenomenal evelopment which medicine has undergone in recent ears is the diminishing emphasis laid on it as an art nd the increasing emphasis laid on it as a science. his has come about through a great growth of the pirit of research and a great increase in its achieve- nts. The change is found in all countries, but is cially marked in America, where the development research had previously been slow. The greater k of medical research has been, and is still being, ried on in medical schools, although the gradual rease in the number of independent research foun- ions has resulted in augmenting greatly the mass original contributions to medicine.

This investigative feature of modern medicine natu- ally raises the general question of medical research in relation to medical schools. Such a broad inquiry olves itself into a number of component questions, uch as: Shall the schools devote their energies solely o teaching? If not, how and to what extent shall they urage research? Shall all, or only certain, schools dertake research? If undertaken, by whom shall it e carried on? Shall there be within the schools pro- essorships or other positions devoted to research alone d distinct from teaching positions, and departments ot research distinct from teaching departments? What to be the relation of medical schools to research undations? It is the purpose of this report to pre- ent the topic in its various relations and afford grounds for its fuller discussion.

SERVICE RENDERED BY RESEARCH

It will be well early in the report to analyze somewhat the conception of research. There are two ways of looking at the phenomena of nature — here we include all those natural phenomena which constitute medicine in its broad sense — and, correspondingly, those who engage in the study of natural phenomena may be divided, more or less definitely, into two classes. Those of the one class are content to dwell on present knowledge and to follow the beaten path. For them, present knowledge is sufficient in itself. They derive satisfaction from its acquisition, from the appreciation of the order and the relationships of things as they now appear, and some of them also from the utilization of present knowledge in the service of mankind. Those of the other class, while appreciating and utilizing present knowledge, regard it not as a finality but as a means to an end, the end being the acquisition of new knowledge.

These two mental attitudes toward natural phenomena and their followers may be called, respectively, the static and the dynamic. The static man of science is the contemplator of the known; the dynamic man of science is the investigator. With the investigator, existing knowledge never wholly satisfies. He is ever longing for something beyond the limits of the known. Even the static man of science may go as far as this. He may have aspiration, and aspiration means something beyond the dead level of existence, even if it never achieves. Those are numerous who desire to investigate but never make or utilize the opportunity to do so. No one can long conduct a laboratory without meeting the dreamer, the man who has visions of achievement. The value of his aspiration and his dreams appears when he is set to work at a laboratory table and is made to submit his visions to rigid tests exactly controlled. With the investigator, aspiration does not end in dreaming. Imagination he must have — this is one thing that lifts him above the level of his plodding fellows. With imagination there should be the ability to form hypotheses, and then the willingness and the perseverance to submit his hypotheses to actual trial. Thus he is led to institute a systematic search for new things, to undertake a specific inquiry into something that is unknown, and if he is successful, to make known to others the results of his work. The published paper is the tangible evidence of the research.

The spirit of research means all of these things, and when it is fully developed in the individual it endows him with a large breadth of outlook and an unquenchable desire to extend the boundaries of knowledge. The spirit of research is a mental attitude, but it is not one that comes to its possessor as only a spontaneous gift of nature. It may, indeed, come thus and it may be transmitted from father to son; but, on the other hand, it may result from training. Whether a man's future outlook is to be narrow or broad is decided, probably with most persons, during the formative period of his scientific conceptions. Whether he shall become a static or a dynamic man of science depends largely on the way in which in his student days he has been taught to look at science. Thus the responsibility resting on his instructors is great. The teaching of even the elements of a science may be from either the static or the dynamic point of view, and the beginnings of the future investigator may thus be laid in the classroom. All of these considerations apply equally to whatever branch of science one may elect to follow, to the follower of medical science as to any other.

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* Report of the Committee on Medical Research of the Association of American Medical Colleges, Frederic S. Lee, Chairman, presented at the annual meeting of the association, Chicago, Feb. 6, 1917.

MEDICINE AND THE UNIVERSITY

In the past, science, like all other branches of human learning, has been fostered mainly by the universities, and this is probably true of medical science as well. Although numberless important medical discoveries have been made outside academic circles, it doubtless remains true that the greater volume of original contributions to medicine has been made under the influence of the universities. In the United States the medical schools were at first slow to appreciate the advantages of university connections; but in recent years they have experienced a great change of heart, and the independent school is rapidly ceasing to be. Thus here, as elsewhere, the home of the medical schools will, in the future, be within the universities.

RESEARCH IN OR OUTSIDE OF UNIVERSITIES

The question may here be raised whether or not the schools will continue to be the chief seats of medical advance. The establishment of special research foundations, under the various names of institutes, commissions, laboratories and other titles, constitutes a notable feature of recent medicine. They have increased greatly in number, especially in America, and have become a powerful agency in medical progress. Their success forces on us the question whether they will not gradually usurp the research functions of the schools and themselves make the chief contributions to future medicine. It is desirable, therefore, to look into the nature and the relations of such organizations.

There exist in the United States at the present time, apart from fellowships and scholarships, approximately twenty-six special foundations which are engaged primarily in medical research. These are given in the accompanying tabulation.

A noticeable feature of this list is that more foundations for research exist inside than outside universities, the proportion in the two groups being about 2: 1. Most of the foundations have been established by single individuals and are supported by the wealth of their founders. With few striking exceptions their funds are comparatively limited, and they are not apt to be increased by donations from other than the original sources. It seems probable, therefore, that in the future, although here and there very wealthy philanthropists may still establish research institutions independent of the universities, they will not multiply considerably.

There are many advantages in university ties for research foundations. Through an encouraging appreciation and illustrious examples the university tradition is favorable to research; a wise administration of the funds given for research is assured; large libraries are directly available; investigators in science allied to medicine are at hand for consultation and stimulus; but especially important is the facility for coming into touch with young men whose careers are not yet determined and, consequently, the possibility of influencing them in the direction of a scientific career. Medical investigators isolated from university rel tionships are liable to fail in the important service discovering and developing investigators — they mus depend on medical schools for the recruiting of thei own ranks. There is thus every reason to believe tha the medical schools will continue to be not only th chief communicators of medical learning, but also th chief promoters of medical advance.

RESEARCH A DUTY OF THE MEDICAL SCHOOL

Even, however, if they are not so fortunate as t possess special foundations for research, the medical schools have a much greater duty to perform for the medical profession and the world at large than the routine teaching of medicine as it is. This has been their traditionary feature; to it everything else has been subordinated. There may be those still existing who believe that a school should be only a teaching institution and that its teaching functions would be imperiled if its teachers should allow themselves to be led away by the desire to investigate. To this it can be replied that never yet has a purely teaching institution in an actively changing science been able long to maintain itself as an exponent of the science of the day. It cannot keep pace with progress and must inevitably be left behind. Moreover, with medical tradition being broken every day and the demand for opportunities for research becoming constantly more insistent, it is daily becoming more difficult for the schools to remain mere teaching institutions. It is not to decry their teaching function if we point out that research has become for them a duty. Indeed, if only we perceive that the inevitable result of greater knowledge of disease will be greater power to control its ravages, we are obviously under a moral obligation

FOUNDATIONS FOR MEDICAL RESEARCH

Name	Location	University Affiliation
William T. Bull Memorial Fund....	New York ...	Columbia
George Crocker Special Research Fund	New York ...	Columbia
Harriman Research Laboratory (Roosevelt Hospital)	New York ...	None
Huntington Fund for Cancer Research	New York ...	Cornell
Loomis Laboratory	New York ...	Cornell
International Health Board of the Rockefeller Foundation	New York ...	None
Rockefeller Institute for Medical Research	New York ...	None
Russell Sage Institute of Pathology	New York ...	None
Henry Phipps Institute for the Study, Prevention and Treatment of Tuberculosis	Philadelphia ..	Pennsylvania
John Herr Musser Department of Research Medicine	Philadelphia ..	Pennsylvania
William Pepper Laboratory of Clinical Medicine	Philadelphia ..	Pennsylvania
Wistar Institute of Anatomy and Biology	Philadelphia ..	None
James A. Patten Fund for Medical Research	Chicago	Northwestern
Memorial Institute for Infectious Diseases	Chicago	None
Otho S. A. Sprague Memorial Institute	Chicago	Chicago
Nelson Morris Memorial Institute for Medical Research	Chicago	None
Cancer Commission	Boston	Harvard
Nutrition Laboratory of the Carnegie Institution	Boston	None
Phipps Fund for the Study of Tuberculosis	Baltimore	Johns Hopkins
Phipps Psychiatric Clinic	Baltimore	Johns Hopkins
Coffin Research Fund	San Francisco	Leland Stanford
George William Hooper Foundation for Medical Research	San Francisco	California
Francis E. Loomis Fund	New Haven ..	Yale
New York State Institute for Malignant Disease	Buffalo	None
H. K. Cushing Laboratory of Experimental Medicine	Cleveland	Western Reserve
Mayo Foundation	Rochester	Minnesota

to secure more knowledge, which is quite as imperative as our obligation to relieve suffering by methods already known to be efficacious.

The results of advance in science and the effects of medical and surgical practice are the same — the lessening of disease and suffering and the prolongation of life. The chief difference between the two is that whereas practice by established methods in the main concerns comparatively few individuals, the results of investigation are likely to have effects which can be applied by physicians all over the world to innumerable patients through unlimited time. Just so far as possible, therefore, medical schools have the duty of acquiring new knowledge quite as much as they have the task of teaching knowledge already acquired. Not all medical schools have recognized this obligation for double service, but those schools that have done so and are contributing to medical progress already stand confessedly out from and above those that do not. This is apparently destined to be so more and more; and, unless the purely teaching schools extend their activities, an undesirable class distinction is sure to arise; and the schools that do not encourage and even go farther and insist on research will become known as lower grade schools, and sooner or later their existence will be imperiled.

We thus come logically to the conclusions that the medical schools of the future must perform both teaching and investigating functions, and that this applies to all schools. It is idle to deny that research, like teaching, is dependent not only on men, but also on money, and that, given the men, that school which is the better equipped financially will be able to perform the more research. But quantity is here a matter of little moment. The mere fact that it cannot do as much need not deter the small school from doing what it is able to do. The great discovery often comes from the humble laboratory.

PRESENT EXTENT OF RESEARCH IN MEDICAL SCHOOLS

Within the better medical schools at present there may be found various classes of persons engaged in investigation. Almost invariably some of them are members of the regular academic staff, and more are engaged also partly in teaching, but a few have purely research positions, giving their whole time to research. Then there may be postgraduate students, some of whom are working for the higher academic degrees of master of arts and doctor of philosophy; there may be those who are primarily practitioners of medicine, but who give a portion of their time to investigative work; and in smaller number there are often found undergraduate medical students who are impelled by one motive or another to undertake the investigation of minor problems that are of immediate interest to them. The existence of such varied groups and the necessity of providing for all of them raises the question as to the means by which within the schools research may best be encouraged and promoted.

RESEARCH BY PRACTITIONERS OF MEDICINE

We do not need to dwell here on the matter of research by postgraduate students, or by those who are primarily practitioners of medicine and not university officers. More and more are the departments of our medical schools being sought by students who are preparing for purely scientific careers, and we must be prepared to carry such students on to the higher academic degrees. Much honor is due those practitioners here and there who do not allow their ambitions to be quenched by the demands of routine practice. In the history of medicine their contributions often stand out as shining marks of progress. Edward Jenner was a country practitioner when he studied the relation of cowpox to smallpox and made his first vaccination. Ephraim McDowell was a practitioner when he performed his first ovariotomy. Even the busy army medical officer occasionally finds time to make notable contributions to medicine, as did William Beaumont when he made his immortal observations on gastric digestion, and Reed, Carroll and Lazear, who laid bare the method of transmission of yellow fever and opened the way for its elimination. Medical literature is constantly receiving valuable accessions from practitioners who are at the same time investigators. With the increasing complexity in technical methods and the increasing demands for apparatus of precision, much of it expensive, those practitioners who are seriously ambitious to investigate will seek the university laboratories and the university hospitals more and more, and, if they are capable men, the laboratories and the hospitals should always be open to them.

MORE RESEARCH WITH LARGER NUMBER OF FULL-TIME TEACHERS

In the gradual elevation of the standard of medical schools it has come about that research is expected more and more of members of the regular academic staff. This can only be commended. The ability and the disposition to investigate should, indeed, be regarded as an important sine qua non of appointment to an academic position, and not only of appointment but also of subsequent maintenance of the position. It should be clearly understood that no holder of such a position is performing his full duty to his school unless he investigates. This is being generally recognized by the best schools in the medical sciences, but it is as true of the clinical as of the preclinical studies. That in this respect there still remains a distinction between the two groups of studies is due to the fact that the evolution of clinicians and of clinical departments from their traditional position as exclusively teaching factors of the schools has been slower than evolution in the preclinical departments. Such a distinction is wholly artificial and is destined to pass away as we get farther removed from our early notions regarding the place which the schools should occupy in medical science.

The establishment of full-time chairs, already achieved in the preclinical and greatly to be desired in the clinical branches, will help to break down this distinction and, moreover, will help to free the schools from every suggestion of commercialism. The great obstacles will be, as they have been in the past, two types of individuals, of whom our schools possess far too many, who give only a part of their time to the school work, who are not investigators, and who possess little appreciation of investigation and little taste for it.

One of these is the clinician who has acquired a practice that is materially too successful and allows it to command him, while at the same time he endeavors to hold a responsible position of leadership as the head of a department in the school. Although not an investigator himself, he may, indeed, perceive the signs of the times and endeavor to satisfy a sensitive conscience through investigation by his assistants, forgetful of the ethical principle that no man can ever do his full duty vicariously. Rarely, however, is his vision so clear as this, and in his position of departmental leadership he may exert a baneful influence in two directions: first, on his departmental staff by virtually discouraging research, and, secondly, on his students by introducing into their receptive minds wholly wrong ideals of the work of the practitioner.

The other obstacle is the subordinate instructor who is struggling to acquire a practice and who holds his school position for its salary, or in the belief that a connection with the school will be of future material benefit to him, or because he is thus enabled to continue his training in his special branch, and who does not realize that the performance of worthy research offers the strongest recommendation for his future advancement. We are too prone to put the intimate, elementary instruction of medical students into such hands.

Investigation by the staff, from the heads of departments down, should be prominent throughout the whole school and should set the standard for the school's activities. Investigation tinges the teaching itself. Welch has aptly said:

> The power of imparting knowledge, gained second hand, fluently and even skilfully, is not an uncommon gift and is possessed by many who have never engaged in research and have no especial inclination or aptitude for it; but the teaching of him who has questioned Nature and received her answers has often, and I think commonly, in spite it may be of defects of delivery, a rarer and more inspiring quality.

RESEARCH SPIRIT SHOULD PERMEATE MEDICAL SCHOOL

The question may here be raised whether and in how far it is advisable for medical schools to establish separate chairs and separate departments for research only. That there is a tendency among universities to establish research chairs in both medical and other schools is evident, and there are notable instances in which independent departments of research have been instituted with successful results. Such independent chairs or departments may be unlimited in the scope of their researches; or, either because of the terms of the gifts of funds which have enabled them to come into being or because of the tastes of their occupants, they may devote their energies to certain specific topics. So far as they supplement and work in cooperation with other research activities of the school, they are to be commended and their multiplication is to be welcomed. But so far as they assume the sole research functions of the school and afford an excuse for other chairs or departments to refrain from such activities, they can offer only an imperfect, inadequate and, it may be, even harmful substitute for better conditions. The conditions can be ideal only when the whole school is permeated by the spirit of research, when this spirit characterizes all departments, whether preclinical or clinical.

ARGUMENTS FOR RESEARCH BY UNDERGRADUATES

Investigation by undergraduates has been encouraged in the past more in Germany than in other countries, and the inaugural dissertations that are required of all prospective graduates of the German universities represent an appreciable contribution to the sum of human knowledge. In medical history there are striking instances in which subsequent leaders have begun their life work as undergraduate students, a notable case being that of Ehrlich, who was a student at Breslau when he first studied the dyestuffs and thus laid the foundation for his later work on tissue affinities and chemotherapy.

How far is it desirable to encourage the spirit and the performance of research by undergraduates, and by what means may it best be accomplished? Students on entering the medical school are usually regarded as so much raw material which, under the tuition of school and hospital, is to be worked over and fashioned into doctors of medicine, who are then sent out into the world to pursue their careers, the most of them as practitioners, a few as investigators, teachers or administrators, while still fewer will combine two or more of these activities. They come to the school with various mental equipments, inclinations and capacities. Some are already filled with the spirit of modern science, enthusiastic to learn of its achievements and eager to follow its allurements. Others know little of it and have never heard its inspiring call. The school has a great opportunity, an opportunity to mold the student mind and determine its attitude toward medicine throughout all later life.

Shall the practitioner follow the static or the dynamic path?

The static mind in medical practice is satisfied to utilize what is already tried and accepted. It becomes habituated to a routine. If the patient possesses certain symptoms he has a certain specific disease; if he has a specific disease he is to be treated in a specific manner. If, therefore, a physician of this type can once get his patient properly labeled, the routine is started. The static mind in medical practice is like the botanist or zoologist who searches for species; it is like the academician in painting who follows established rules. An exceptional symptom is an anomaly, a thing to be neglected because it does not fit into the preestablished scheme. Resemblances, not differences interest him. In surgery, the static mind is often an attribute of the brilliant operator whose technic is the envy of his younger colleagues and is measured by the number of minutes in which he is able to perform a given operation. The static mind is not averse to learning new methods and new points of view, provided they have once been pointed out by others; but, once acquired, the new becomes again the conventional and a new routine replaces the old.

GREATER PROGRESSIVENESS OF THE INVESTIGATIVE MIND

To the dynamic mind in medical practice, on the other hand, a disease is not primarily and solely a pathologic entity, but an indication of a deranged complex physiologic mechanism, and it requires the most careful observation and analysis. Each new case of a disease is not simply the replica of previous cases, but presents a problem for investigation, a new topic for research. A different symptom is a thing of interest, which is to be referred back to its physiologic basis and may alter the course of treatment fundamentally. The dynamic mind is never closed; it is constantly looking for new points of view and new methods of diagnosis, of prevention and of treatment; it is the progressive mind, the mind that recognizes medicine, not as an art, but as a science, one that is actively in the making and demands contributions from all of its followers.

Of these two lines of thought and practice unquestionably that of the investigator means more for medical progress and more for the benefit of mankind. It is that which every practitioner ought to follow, and it is that which every practitioner can follow in greater or less degree. Whether or not he shall follow it depends probably in most cases on the influence which he has received from his medical school. Is it a school which is permeated with the spirit of research? Are the facts and principles presented to the student as finalities or as steps on the way toward something better, something toward the gaining of which he himself may contribute? Furthermore, is he encouraged, or even allowed, to undertake investigation during his undergraduate days?

INCREASING OPPORTUNITIES FOR UNDERGRADUATE RESEARCH

Here we find that the practice of our American medical schools varies greatly. As the result of a questionnaire conducted by Dr. Cecil K. Drinker five years ago it was found that of twenty-five selected schools of different grades, but including the foremost schools in the United States and Canada, seventeen allowed their undergraduates to undertake research in conjunction with their regular medical work; but of these only nine aided it by a concession of hours in the regular roster. It is doubtful whether any others of the 120 schools then existing offered a similar privilege, and hence the percentage of American schools favoring undergraduate research in 1912 would probably not have been over 7.5. This number has probably increased slightly within the past five years, since there is a growing tendency among the better schools to introduce elective work, a part of which may be devoted to research. Thus, although a distinct change in the condition would probably appear if the schools of today were compared with those of twenty-five years ago, the encouragement of undergraduate research is still small.

UNDERGRADUATE RESEARCH TO BE ENCOURAGED, NOT REQUIRED

That there should be undergraduate opportunity to investigate is hardly open to question. Deliberately to close the laboratories and hospitals to those students who desire to go beyond existing knowledge cannot be considered. At the opposite extreme and equally inadvisable may be placed the forcing of research on all. That research, however, should be constantly kept before the student as his ideal hardly admits of discussion. This can be done only when the spirit of research permeates all medical teaching, from the student's entrance to his graduation. There is perhaps no science in which less can be taken for granted than in the science of medicine. No topic here can be regarded as a closed chapter. In the teaching of such a rapidly growing science there is no place for ex cathedra statements, or for appealing to supreme authority, whether of doctrine, person or fact, for doctrine and person and fact are frequently dethroned. Such teaching can exert only a pernicious, deadening influence on the pupil's mind; it imposes on his mental processes shackles which can be broken later only with difficulty. The attempt to turn out a finished product, a young doctor crammed to the utmost with existing knowledge and a familiarity with existing methods of diagnosis and treatment, is fatuous. In a few more years the finished product will be behind the times and much of his knowledge will be useless. The student should be taught to have, not indeed a captious, but a wholesome, hesitation to accept authority blindly. He should be led to seek the conditions of discovery. He should be equipped with the means of progressing after his student days are over. There is no single way to accomplish this more surely than by encouraging him to undertake before he leaves the school some piece of original investigation.

RESEARCH AND THE OVERCROWDED CURRICULUM

The objection will here be raised that with the enormous mass of material now to be learned and the already excessively crowded curriculum there is no time for the student to do anything outside of his routine studies. Here a glance at the origin of the present curriculum may be of value. When the addition of a fourth year to the former three years' course was contemplated it was believed by the leaders in medical education that the student would be given opportunities for research. But the demands, partly for laboratory work in the preclinical subjects, and chiefly for more routine clinical work, were too great to be resisted, and the added time was parceled out among the departments of the school and devoted to more routine work. From time to time still further routine work has been added, also chiefly clinical, until we have the present 4,000 hours of prescribed work, with many schools going beyond this amount, and all schools overburdening their pupils.

Although this condition rests on the plausible contention that the enormous volume of present-day medicine requires the present crowded curriculum, it is, nevertheless, contrary to rational ideas regarding educational methods. The present four years' curriculum requires a stuffing of the student's mind, with all too little time for mental digestion. It should be critically and impartially reexamined with a view to the judicious omission of unnecessary matter. The undergraduate ought not to be expected to acquire pronounced technical skill.

We must give up, too, the idea that we can train the specialist during his undergraduate life. We do not even attempt this with the student who is to be an anatomist, a physiologist, a pathologist, a bacteriologist or a pharmacologist; we should not attempt it for the future ophthalmologist, otologist, laryngologist, neurologist, obstetrician or even the operative surgeon. All these must acquire their special training during their postgraduate years. It must soon be recognized that only the fundamentals should be taught the undergraduate, and the curriculum must be made to include only the fundamentals.

A fifth year appears now to be a practical certainty, soon to be realized by all schools. Here a warning should be raised. Unless those who favor undergraduate research assert themselves there is a danger that this new year will meet the same fate as its predecessor. Every attempt to devote it to routine hospital duties or parcel it merely into additional routine instruction of any kind should be resisted. There is every reason to believe that with the curriculum organized rationally, time can be found for many undergraduates to test their powers as investigators.

RESPONSIBILITY OF MEDICAL SCHOOLS

In the gradual evolution of medical schools from humble beginnings we have not yet come fully to realize how great is the part that they may play. They should be the supreme leaders in medical science. They should know its history and be wise in conserving the best and most worthy of its traditions. They should be the chief exponents of the medicine of the day and the teachers of its future disciples. They should be foremost in making the medicine of the morrow and in training its future discoverers. They can do all of these things if they will. It is for them to decide whether or not they shall rise to the full dignity of leadership.

THE BACTERIOLOGY OF FOODS *

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While the bacterial examination of water in this country has led for some years past to fairly uniform results and has given information of the highest value for estimating the sanitary quality of a water, the bacterial examination of foods and its interpretation have been followed in many cases by a conflict of competent opinion and by a confusion of official and semiofficial rulings that have caused some bewilderment. A brief survey of the situation may be useful in drawing attention to certain points at issue.

It will be recognized that the value of bacterial food examination has definite limits. Actual discovery of pathogenic bacteria in food is a rare occurrence, and in particular cases may have little or no practical significance. Few workers would think of advocating a routine bacterial examination for the purpose of ascertaining whether or not specific articles of food can safely be eaten. Milk, the food most frequently subjected to bacterial examination, is never, so far as I know, examined with the view of determining the presence or absence of disease germs before it is consumed. To most bacteriologists there is no need to dwell on the futility of such an attempt.

It is true that in certain instances in which food poisoning due to bacteria or their products has occurred, pathogenic bacteria have been found in the remnants of the food after the event; but at most such findings afford some degree of corroboration, and oftentimes do not greatly strengthen the evidence connecting the outbreak of poisoning with a particular food. Infections due to milk are traced to their origin almost altogether through use of epidemiologic data, and as, for example, in most milk-borne typhoid outbreaks, the finding of a specific germ in the food itself, even if possible, would add little, if at all, to the weight of the evidence. It is not likely that the occasional cases of meat poisoning due to *B. enteritidis* and its allies could be materially diminished by any practicable system of bacterial meat examination.

Direct preliminary examinations of food being, therefore, of little or no value, there remains the method of attempting to estimate the possibilities — not actualities — of danger on the basis of bacterial findings. This method has been applied especially in the case of milk, oysters and a few other foods, and its use has been apt to lead to the adoption of standards of bacterial purity which serve to condemn or approve. It is precisely this subject of standards that has given rise to sharp controversy and has been surrounded with much misunderstanding.

Although the fixing and interpretation of standards has been much discussed in connection with water analysis, there is still some difference of opinion, tacit or expressed, as to what shall constitute a standard and what standards are for, anyway. The significance of a standard weight or standard measure can be generally appreciated even by those without technical training, but not so that of a standard of interpretation. The earlier chemical understanding of a "standard of purity" is still current, and it is a common conception that bacteriologists test food or drink to determine the presence therein of definite harmful bodies as the chemist tests for arsenic or lead. This is doubtless partly due to the feeling that all bacteria are harmful and that the fewer bacteria in milk or water the safer or more wholesome are these substances. This belief also colors the acceptation by laymen of bacteriologic opinion and their interpretation of bacteriologic data, as when Albert Shaw[1] construes the bacterial limit proposed for filtered water by the German health authorities as "a warning to the municipal governments of the country not to supply their citizens with a drinking water containing more than 100 cholera germs to the cubic centimeter," and adds, "It was considered that water infected to no greater extent could be used without serious danger."

The arbitrary adoption of a standard yard, pound or bushel is largely for the purpose of protecting the community against fraud, and this is true to only a slightly less degree of such measures as the fixing of a standard for the butter fat and total solids in milk. Nearly all chemical food standards fall in this category. It is evident, however, that bacterial standards for water, milk and foods in general are of a completely different character. Such standards merely express the expert opinion of one or, more commonly, of a group of persons that indications of sanitary unwholesomeness are afforded by the presence of a certain number or kind of bacteria. The history of science is full of illustrations of the danger of applying too rigorously or too mechanically any such standards of interpretation. One of the most familiar of these is the famous case of the chemical standards for drinking water. The value of the chemical examination of a water as a guide to its sanitary quality is now admitted to be very slight; some sanitarians would deny it altogether. And yet for years an enormous amount of energy was expended on making chemical analyses of water and ingeniously interpreting the results, usually on the basis of shrewd observation of the water sources. There is no doubt that the strict application of such chemical standards led frequently to the condemnation of perfectly wholesome water and sometimes to the sanction of potentially dangerous supplies.

While these facts respecting the tentative and fallible character of standards of interpretation are generally familiar to all scientific workers, it is well known that an open avowal of this situation is not always satisfactory to public officials and others who have decisions to make. Judge and jury would prefer the assurance that the thing is wholesome or unwholesome rather than the opinion of the witness that it may be so. It is all the more desirable to make clear to the public the fact that all bacterial standards of interpretation are but the expression of a more or less general consensus of opinion and are not claimed by any competent worker to be final or absolute. It is universally found that all standards of interpretation as soon as they are adopted must face so-called exceptions in which experience is at variance with the rigid application of the standard and overweighs the latter. Take, for instance, the standard prepared by the commission appointed by the Treasury Department to recommend standards of purity for drinking water supplied to the public by common carriers in interstate commerce.[2] The numerical limit proposed (100 colonies per cubic centimeter developing in twenty-four hours at 37 C.) is, as such standards generally are, the result of a compromise; it should have been somewhat higher in the opinion of some members of the commission, lower in that of others; others still would have omitted a colony count standard altogether. In point of fact, however useful the numerical limit may be in affording leverage for an expert opinion, it can hardly be maintained to be valid as an absolute criterion. In several instances I have found that deep well waters stored at a low temperature give a high 37 degree colony count in a few days. One such water giving no gas in 100 c.c., developed only twenty-eight colonies per cubic centimeter at 37 C.; but when stored for five days in a clean glass vessel at 10 C., developed 12,300 colonies. It is difficult to believe that any real change in the wholesomeness of the water occurs in such cases.

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* Chairman's address, read before the Section on Sanitary Bacteriology of the Society of American Bacteriologists, Dec. 29, 1916.

[1] Shaw, Albert: Municipal Government in Continental Europe, p. 398.

[2] Reprint 232, Public Health Reports, Nov. 6, 1914.

When the exhaustively studied and relatively simple water standards are subject to such exceptions and reservations, it is certainly not to be expected that bacterial standards for food will be any more satisfactory. The curious state of affairs with reference to bacterial criteria for the purity of milk exemplifies the uncertainty that actually exists. An "excessive number" of bacteria in milk seems to signify to some workers a number of over 200,000 per cubic centimeter, to others, over 1,500,000, and to some perhaps any counts that run above 10,000. The accuracy of the methods of milk examination current in recent years does not strengthen the case for arbitrary judgment. Many attempts have been made to standardize the methods of bacterial milk examination, and yet in the cooperative investigation conducted by four large New York laboratories and reported by Professor Conn, it was found that the final report on one and the same sample of milk — to select one case — might vary as much as from 30,000 by one laboratory to 2,410,000 by another.[3]

Apart from such difficulties, which are due to divergence in laboratory practice and can be in part although probably not altogether overcome, there is the question that already has given rise to much discussion, namely, the interpretation to be placed on consistently high bacterial counts in milk, numbers, let us say, ranging by the ordinary plate method quite uniformly above 200,000. It seems now to be established that the number of bacteria in market milk depends chiefly (*a*) on the initial contamination from the cow and from unsterile utensils, and (*b*) on the bacterial growth occurring between the collection and delivery of the milk. These two sets of factors are often summed up by saying that large bacterial numbers indicate that the milk is either dirty or stale or both. The use of words with offensive connotations is probably not without some justification, but should not be allowed to affect too much the judgment which experienced workers accord to the facts.

As regards numbers due to initial seeding, it is plain that the general cleanliness of the cow may conceivably be a matter for sanitary as well as esthetic consideration. There is less likelihood that dangerous bacteria will get into the milk from a clean animal than from one slovenly kept. Just how important a safeguard against infection this sort of cleanliness is cannot be even approximately estimated. It is unquestionably far less valuable than attention paid to the animal's health. As has been demonstrated many times, a clean but diseased cow is more dangerous than an ill kept healthy one. It must not be forgotten, however, that clean and orderly methods react favorably on the morale of the industry, and their practice unquestionably stimulates interest in the far more significant matter of the health of the animals and of the employees.

The other main source in the initial seeding, the bacteria derived from apparatus and utensils, is of less sanitary importance. Pease[4] has shown how a large amount of bacterial multiplication may occur in milk cans even after "reasonably efficient, obvious and bacterial cleaning." In view of what is known of the conditions necessary for the multiplication of pathogenic bacteria, it is difficult to believe that these cans are to be properly considered as "breeding places of disease germs." We must admit that bacteria from utensils that have been thoroughly cleaned but not sterilized are not likely to belong to dangerous varieties, although their presence in large numbers may impair the keeping qualities of the milk, and so be of commercial importance. In point of fact, the treatment that milk and other foods get in the ordinary well conducted household is likely to add many bacteria of the same general character as those under discussion. To call milk "dirty" if the number of bacteria exceeds 10,000 or 200,000, or what not, is to substitute rhetoric for scientific precision.

The second factor in producing high bacterial counts in milk is the time for which, and the temperature at which, the milk is held. There is no need to rehearse the numerous experiments that have been made showing the rapid rate of bacterial propagation at high temperature and the slackening produced in this rate by chilling. Milk at the start relatively poor in bacteria may, if not cooled, develop as many bacteria in a few hours as another lot kept at low temperature will in several days. Regardless of the time elapsing since collection, milk containing many bacteria is sometimes said to be stale, or if few, to be fresh.

The real question here of course concerns the effect of bacterial multiplication in milk and its sanitary bearing. If certain kinds of pathogenic bacteria enter milk at the time of, or soon after, collection, there is evidence that they multiply and so increase the chances of serious infection. Possibly this danger is somewhat lessened if they do not enter until after the multiplication of the ordinary milk bacteria has passed into the hundred thousands; but we possess little certain information on this point. Since in the great majority of cases pathogenic bacteria are not present or cannot be demonstrated, the problem more commonly discussed is whether the products of ordinary bacterial multiplication are in themselves harmful. In some instances the use of old milk has been thought to be connected with the production of acidosis in children who were not well nourished or who had suffered previously from gastro-intestinal disturbance.[5] It cannot be assumed offhand that all bacterial products are injurious; some may increase the palatability and possibly the digestibility of food substances. Milk intentionally seeded with *B. bulgaricus* has been used acceptably and in the experience of some physicians beneficially by invalids and persons in delicate health. It is yet uncertain whether the products of *B. coli* or other organisms present in the healthy mammalian alimentary tract are not highly beneficial if not essential to normal digestion. So far as the bacterial products in are dangerous to man. Ovarian infection of fowls is said to be very common throughout the United States, and investigators of food-poisoning outbreaks will do well to bear this situation in mind. The danger, such as it is, is of recent development, since the wide distribution of the fowl infection has occurred only in the last few years. No recent increase in number of food-poisoning cases has been remarked. Whatever may be the possibility of specific infection with *B. pullorum*, a conservative tendency with regard to the creation of numerical bacterial standards is noticeable among workers in this field. The experienced observers of the U. S. Department of Agriculture content themselves with the statement that "canned eggs with the majority of samples having counts of less than 5,000,000 bacteria per gram, and with 100,000 *B. coli* or less can be prepared in the producing section from the regular breaking stock, provided strict cleanliness and careful grading have been observed."[19] The apparent admissibility of such high numbers of bacteria in a food substance would have been eyed askance by some sanitarians a few years back, and is today perplexing to many laymen. Water with a similar bacterial content would be looked on as next door to sewage. Perhaps no clearer demonstration could be afforded of the fact already insisted on that the significance of the bacterial examination of foodstuffs lies in its use as a guide to procedure, not in the disclosure of a specific danger.

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[3] Conn, H. W.: Reprint 295, Public Health Reports, Aug. 13, 1915.

[4] Pease: Am. Jour. Pub. Health, 1916, 6, 563.

[5] Chapin, H. D., and Pease, M. C.: Acidosis of Gastro-Intestinal Origin, The Journal A. M. A., Nov. 4, 1916, p. 1351.

Considered broadly, the present value of the bacteriologic examination of a food depends largely on the nature of the food and on the information that has been previously obtained regarding the conditions of production and distribution. Uncleanliness and carelessness in handling, and neglect of proper preservative methods lead as a rule to an increase in the number of bacteria. To the extent to which these factors favor opportunities for specific infection to that extent do numbers afford some indication of unwholesomeness. According to the available evidence, however, derivation of food material from an ailing animal or contact with a diseased human being is far more crucial from the sanitary point of view than simple uncleanliness. Mere enumeration of bacteria throws little light on the real possibilities of danger. Bacterial examination may be quite superfluous. When one sees a swarm of flies alighting indiscriminately on bread, meat, fruit and all kinds of organic matter, a bacterial examination is not necessary to demonstrate the undesirability of the condition.

With reference to the effects due to multiplication of bacteria in foodstuffs, more evidence is needed. The determinations of ammonia in egg products seem to indicate that any measurable degree of chemical decomposition is accompanied by a very large number of bacteria, much larger, for example, than the number ordinarily held permissible in milk. The Chinese preserved egg known as pidan shows a very large amount of ammoniacal nitrogen, and there is no doubt that marked decomposition of the egg protein has taken place.[20] This decomposed egg substance is eaten freely in China, and its common use is not known to be followed by any ill effects. In view of the apparent innocuousness of the bacterial products in some foods, such as cheese, butter and sour milk, which are consumed without being heated, it is perhaps hasty to assume that all indications of bacterial activity should be stigmatized as attesting the presence of "ptomains" or the "poisonous products of decomposition." On the other hand, it has never been demonstrated that the products of bacterial growth in protein foods may not be insidiously injurious. The truth is that a great many foods technically more or less decomposed by bacterial growth are habitually eaten without apparent harm. We simply do not know at what point the products of bacterial growth become hurtful, or even what effect is caused by the growth of specific kinds of bacteria. Are most of the products of bacterial growth in foods physiologically indifferent in the quantities in which they are ordinarily consumed, and when injurious products are present, are they due to rare accidental contamination, or do all bacteria growing in milk, meat or eggs generate noxious substances which can inflict damage on the human organism, albeit such danger is not immediately recognized? Such questions cannot be satisfactorily answered at the present time, and need but to be asked to make clear the limitations of our present knowledge and the necessity of further investigation.

On the practical side it seems desirable that recommended procedures, standards and the like should keep pace with our advance in knowledge, not outrun it. In the dairy industry great stress has often been laid on barn conditions, and dairy farmers in some parts of the country have been forced to expend large sums of money on the assumption that specified barn conditions are essential to the sanitary production of milk. It is somewhat disconcerting to find that the most recent dairy studies indicate that "the condition of the barn and its surroundings exert practically no influence" on the bacterial milk counts.[21] No surer method of undermining public confidence and generating a reaction against sanitary measures can be found than the enforcement of regulations that are shown in a few years to have been unjustifiable and that must be rescinded. Confidence in "experts" and in "science" itself is shaken, and it becomes more difficult to carry out measures on which we are all agreed. We are sometimes forced to act on the basis of what knowledge we have, although it is notoriously insufficient, but we can avoid being dogmatic and extreme. Our so-called standards are often nothing but working guides for the experienced bacteriologist, and but ill adapted for crystallization in official regulations, where enforcement rests in the hands of the technically uninformed.

Since the bacteriology of foods presents today many unsolved problems, both of fact and of interpretation, it is clear that further investigations in this field will be of practical service in protecting against food infection, in encouraging cleanliness and common sanitary decency, in preventing economic waste by decomposition and by the condemnation of wholesome food on technical grounds, and perhaps in safeguarding the public health against dangers not now realized.

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[19] Bull. 224, U. S. Dept. Agric., p. 21.
[20] Jour. Biol. Chem., 1916, **28**, 125.
[21] Harding: Am. Jour. Pub. Health, 1916, **6**, 562.

What it Costs to Educate a Physician at Columbia University.—Dr. Walter Mendelson, president of the Physicians and Surgeons Alumni Association, in his annual report, states that the total cost of each student's education in the medical department of the university is $3,000. Of this amount the student contributes only $1 to every $2 expended by the university. He estimates that the teaching staff contributes each year between $24,000 and $30,000 toward the maintenance and expenses of the medical department of the institution.

THE RELATION BETWEEN PEDIATRICS AND GENERAL MEDICINE *

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The evolution of pediatrics into the dignity of a specialty has been of comparatively recent date. It is still in process of development. Many obstacles have been encountered in the ascent of this important branch. Some questions are yet in process of settlement. The relation between pediatrics and general medicine, and the position the former is destined to occupy will be determined largely by societies and occasions such as this. It is not necessary to dwell on the great importance of pediatrics before any medical assemblage.

The general public, professional as well as lay, however, often seems slow in recognizing relative values in the different departments of medicine. The beginnings of life certainly constitute the most favorable period for studying all the phenomena of life — normal as well as abnormal. It is here that we make a distinction between a broad and a narrow specialty. The extreme specialist by the exclusive treatment of one organ or even of several correlated parts of the human body may relieve suffering and prolong life, but here his service ends. The pediatrician likewise relieves pain and conserves life, but his efforts serve not only the individual but, in a large sense, the race as well. This is where our labors broaden out and touch life in its widest relations. It is where our specialty differs from others and, we believe, should give it a place of overmastering importance. We are working in line with Nature's most insistent efforts — the conservation and improvement of the race. We must hence be careful not to narrow our outlook or confine too rigidly the scope of our work.

Pediatrics is simply the application of the study and practice of internal medicine to one part — and that the most important period of life. Here, as in other branches of medicine, we must avoid the danger of overspecializing. When pediatrics is treated as an extreme specialty, the tendency is to detach it too much from general internal medicine, and both thereby are apt to suffer.

We see this proneness especially exemplified in those specialties occupying a narrow field in which a high degree of technical skill is required but which tend to detach one's view from a broader outlook in medicine. Perhaps this danger is best exemplified in the case of dentistry. For many years most of the efforts of its workers have been carried out in perfecting exceedingly fine and difficult mechanical problems. They did not seem to grasp the widespread ramifications that are sometimes seen in connection with diseases of the teeth. A broader outlook now discovers that certain affections of the joints and other structures may have a very close connection with undrained abscesses at the roots.

This may seem to be an exaggerated example of the narrowing effects of extreme specialism, but it must be confessed that this tendency is seen in other directions as well. With such a broad specialty as pediatrics this danger may not be so great, but still it undoubtedly exists and must be guarded against. Perhaps it is best shown in the too common treatment of infant feeding. This is often detached from the great underlying problem of nutrition, and handled apart from the laws of biology and nutrition in general. Any period of life is a part of all life, and must not be too much detached from what precedes and follows.

It is thus a mistake to carry to extremes the specialization of any branch of medicine. While there may well be specialization in technic, it should ever be kept in mind that infants, children and adults are not different species, but merely different forms or stages of a single species. If there were sharp divisions between these forms of the same individual, it might be possible for one specialist to take hold where the other left off. But there are no such divisions. The life history of every individual consists of a gradual developing process that extends over a long period of years, a process in which the building up eventuates in reproduction and a later period of gradual disintegration.

In the earliest stages of life, building up is extremely rapid, and in the last stages disintegration is also rapid. Toward the crest of a life curve, movement in either direction is slow. Life processes are always continuous. The changes that take place during the life cycle are not basic but secondary, a gradual change in form being accompanied by a gradual change of function. The following quotation from Dr. Abraham Jacobi[1] puts this thought in a concrete manner:

> I am quite sure that the pediatrist cannot succeed in his practical work without being a close student of nosology in general, and on the other hand, that the internist, the general practitioner and physician does not, without being at the same time a pediatrist, reach a standard by which he may be of real use either at the individual bedside or as a sanitarian in the councils of the nation. The world is entitled to demand of every one of us a complete knowledge of and profound interest in the physical life both of the young and the old.

In the great problems of nutrition, the continuity of life in all its forms and periods stands out most prominently. Both before and after birth, it is the overmastering question, as nutrition means everything at the beginning of life. It concerns growth — which means creation as well as operation.

The chemical basis of life is the same at all stages of the life cycle. The same fundamental food materials are used by the embryo, the infant, the child, the adult and the aged. The form of the food materials may not be the same at all stages of life, for change in form of the food goes hand in hand in some instances with a change of form and structure in the individual. Milk is a striking example of this fact. Here is a liquid food which turns into a solid under the action of the stomach secretions, the degree of solidity keeping up with the capacity of the stomach to utilize food of increasing density. The casein of milk has a developmental as well as a nutritional function which has been brought out by a study of the biology of nutrition in connection with the various milks.

The essential unity of the nutrition problem stands out clearly when one sees the same form of food being utilized by every form of life from the single cell individual to man in the period of the infant, the adult and the aged, despite their difference in form, structure and method of performing vital functions. In the management of infants, nutrition is the most important factor, for the building up process depends on proper nutrition, and any serious mistakes here are apt to show lasting effects.

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* Address delivered at Philadelphia, Dec. 12, 1916, at the twentieth anniversary meeting of the Philadelphia Pediatric Society.

[1] Jacobi, Abraham: Introduction to Nascher's Geriatics.

The finest possible training for the general practitioner and specialist can be procured by paying full attention to the problems of infant care and nutrition. Here the physician must depend on his own powers of observation, for the infant cannot tell him anything. It is almost like a laboratory training.

The chemical processes of nutrition in the adult are the same as in the infant, and if they were better understood it would not be difficult for the same physician to manage this problem with either infant or adult. As long as the stress is laid on matters of form and technic in nutrition, so long will it be necessary to specialize in this direction. The remedy for this overspecialization is a more complete knowledge of the basic principles of general nutrition in connection with the changes of form and structure during development.

The study of disease at different eras of life is largely an investigation of the changed reactions of the body to the different infections as they occur during these periods. Thus by a change in the method of oking at diseases, the same physician might readily nderstand the diseases of both infants and adults. The maladies generally considered as peculiar to infants are due to the fact that the infant has not yet adapted itself to its environment. As it is attacked by one after another of the infectious diseases, it acquires an immunity which usually lasts through life. Consequently these diseases are not commonly encountered in adults.

The problem, then, might be studied under the subject of immunity and not necessarily under that of infancy. Anaphylactic shock is more often seen in early years while tolerances are being established. The recent interesting and valuable studies on acidosis and protein sensitization, and the recognition of food idiosyncrasies have been carried on with the young. We may add that immunity, if understood, is just as applicable to the adult as to children.

Some diseases, while not exclusively limited to early life, have such a preponderance at this time that the period of study and observation is largely limited to the time of growth. A rapid growth is always accompanied by instability. Pathologic development is often largely the end-product of an overstrained physiologic activity.

While the study of pediatrics in its broadest outlook reaches out into almost every field of endeavor, there are thus some phases that are peculiarly its own. It is often necessary to start with embryology and consider developmental defects and diseases of the fetus itself in order to understand fully conditions that may ensue after birth.

Of the three great critical periods of life — birth, adolescence and beginning old age — the first is the most important. Accidents at this time, especially the brief asphyxia intervening in the change from the placental to the systemic circulation, may cause a meningeal apoplexy that will handicap the individual through the whole of his human existence. Other accidents may occur at this time that may either have only a temporary effect or disastrously cripple the whole life. The great phenomenon of the first entrance into life must always be investigated and considered by one who would understand certain conditions that may later unfold themselves.

Diseases of the newly born and of the early years, infant feeding, the exanthems, diphtheria and pertussis come, of course, within the special sphere of the pediatrician.

Young protoplasm is highly irritable, and actively reacts to all stimuli; hence the predominant rôle played by infections of all kinds. Symptomatology of many diseases appearing also at later periods of life is often specially differentiated in the young. Pneumonia, pleurisy and empyema, appendicitis and tuberculosis may be mentioned in this connection. In the latter disease, as is well known, the lymph glands, bones, joints or peritoneum may bear the brunt of the infection instead of the lungs, as in the adult.

While tuberculosis is a disease of all ages, its ravages are peculiar and widespread at the beginning of life. Children contribute a large share of the awful record of one seventh of all the deaths in the world. In order to treat this disease successfully, early recognition, before much destruction of tissue has taken place, is imperative. Early diagnosis means a successful cure in a large proportion of cases. Humpbacked children from tuberculosis of the spine, and permanent lameness from hip joint disease are rapidly becoming misfortunes of the past. Not only the way in which the tubercle bacilli act in various tissues, but also the methods of their transmission are now known, owing to animal experimentation and the study of the disease in children. A knowledge of its possible spread by meat and milk has led to the careful inspection of carcasses and an improvement and cleaning up of the milk supply in large areas of country by medical commissions and municipalities.

The whole tuberculosis crusade, in which children are so largely the direct beneficiaries, cannot fail to have a benign effect in later life as well, as many now believe that most adult tuberculosis has had its beginnings from a focus of infection starting in the infant or young child. As a result of modern study and treatment, in a period of twenty years, the death rate from tuberculosis in New York was reduced approximately 40 per cent., and in Boston 45 per cent. Investigations showing that tuberculosis is not inherited have removed the hopelessness that naturally went with such a belief, as regards both the child and the adult. A knowledge that this dreaded disease is often both preventable and curable — at all ages — cannot fail to stimulate renewed and successful efforts for its final elimination.

It would take too long to recall the whole list of diseases that so well repay special study during the early years of life. Rickets, the commonest developmental disease of infancy, may be particularly mentioned as warranting future study. The susceptibility of infants to bacteria, owing to their active metabolism, is shown in many kinds of sepsis, and must always concern the practitioner.

The study and treatment of actual disease is not all that concerns the pediatrician. No branch of medicine opens out into such a wide field of prevention and sociologic investigation. Nowhere does medicine touch life in such a close connection as with the child. Permanent race betterment must be accomplished entirely through the young. Infant mortality is thus a grave and pressing problem for the pediatrician. Much has already been accomplished along this line by correcting faulty diet and hygiene; but much more remains to be done. It is interesting to note that it has been the success in saving infant and child life that has led to the average prolongation of life in recent years. While largely through the efforts of individual physicians and pediatric societies the expectation of life has been increased for infancy, childhood and early adult life, the same is unfortunately not true of middle age and later life. Many factors have entered into the accomplishment of infant preservation, but the credit belongs largely to pediatricians.

When we consider the estimation that 40 per cent. of the deaths occurring during the first year take place during the first month, and that one baby in five dies before reaching the age of 1 year, we see what a field of improvement opens out at the very beginning of life. As 88 per cent. of babies that die before the end of the first year have been bottle fed, we can see why even the ablest feeders among the pediatricians have been preaching the conservation of breast feeding.

These and other problems as to the hygienic care of infants and little children have been much aided by the establishment of child welfare organizations and milk stations in the poor and congested parts of our great cities. The same agencies are much needed in the sparsely settled regions of the country, where poverty and ignorance are just as disastrous in their effects as in the cities. It is a significant fact that in recent years the death rate of New York City has been lower than the general death rate of the state. This is due largely to the extra care given to the saving of infant life, and the city is usually ahead of the country in this respect in spite of the obstacles arising from overcrowding.

In later years, school hygiene should be regulated more by the pediatrician than by the politician. Too long sessions, cramped positions from improper chairs and desks, imperfect ventilation, poor lights and a bewildering variety of studies are all too frequently present and handicap the child during the school age. Not only health departments but school boards and even legislatures should include competent physicians in their membership. The pediatrician is needed to instruct the pedagogue in some fundamentals of child nature and growth. The latter might not fail so frequently if he had the benefit of such instruction.

Many other questions, such as the great abuse of competitive athletic contests in our schools and colleges, should be decided by educated physicians rather than by professional athletes. The various problems connected with institutional life — where children are sometimes exploited — all await a rational solution. Child labor and the working of pregnant women must concern those who are looking to the future of the race. Finally, it may here be of interest to put on record the fact that hospital social service in this country owed its first conception and successful operation to the children's division of a general hospital.[2]

One of the great services that pediatrics may render to medicine is in the field of original research. It offers today the most promising field for advanced work in scientific and experimental medicine. Fully to occupy this field, however, its followers must apply the broad methods of science at large to the solution of its problems. The best period for advanced study of disease is during the rapid evolution of the organism. The principal portals of the body are then open to infection, and the various tissues quickly react. As an example, the lymph vessels in the nasal and pharyngeal mucous membranes by their size and number quickly take up the germs that so readily attack the nerve centers and other parts of the body. No wonder that poliencephalitis, poliomyelitis, and meningococcus and tuberculous meningitis are so frequent when their active germs are abroad. Their future conquest may consist not only in a study of the life history and action of these germs but also in guarding the gateways more carefully.

We may recall in this connection that the greatest modern triumph of medical therapeutics — diphtheria antitoxin — followed the discovery of the germ and its effects as seen and studied in children. Antimeningococcus serum may now be added to the list, and future remedies will doubtless follow in other diseases from the combined researches of the pediatrician and the laboratory student. The workers in the various fields of medicine must combine and collaborate more in their efforts.

This will obviate the tendency to extreme differentiation that has detached too much the part from the whole. Partly owing to this, the various specialties have been accepted without much appreciation of their relative values. Those of fundamental importance are grouped with others having only local forms that minister to comfort and utility. It is thus right to make a sharp distinction between a major and a minor specialty. Of the former, pediatrics should take the highest place, as it deals with the formative period of life and consequently renders the most lasting service to the race.

In order to start right in this regard, medicine, as distinguished from surgery, should be handled in our universities in three great divisions: (1) pediatrics; (2) internal medicine as applied to adults, and (3) diseases of the nervous system. The threefold plan will start with the study of disease as manifested in the opening years of life, will next continue an investigation of the character of disease as seen in riper years, and finally study the great degenerations that are largely brought about by defective action of the nervous system induced principally by faulty and failing metabolism.

The minor specialties should occupy a very subsidiary space in the curriculum.

All the specialties require a thorough grounding in the underlying principles of scientific medicine. The old idea that work in any specialty should be preceded by wide experience in general medicine still holds. The quick step from the medical college to a specialty, without this previous experience, has proved disastrous, It has produced a group of skilled medical mechanics rather than broad minded physicians who can work in a specialty without detaching it too much from all relations to general medicine. Pediatrics should be one of the broadest of the specialties — it has been aptly described as the specialty of the general practitioner.

The twentieth anniversary of the founding of the Philadelphia Pediatric Society is one of the occasions that should mark an epoch in the advance of this branch of medicine. It is the glory of our profession that each medical generation hands on the torch of knowledge from age to age always with a brighter and steadier flame to illumine the dark places of ignorance and suffering. It is for the healing of the nations.

We believe that this society will make its fair contribution to the ever widening knowledge of the hidden things of life. You have the inspiration of living in this old time cradle of true Americanism and liberty. May your contributions be commensurate with your privilege. We believe in you. We look to you in the future as in the past to uphold the best traditions of our guild. We shall take pride in your achievements and shall, above all, believe that you have the will to labor and achieve. May you translate vision into action and thought into deed. You can, at least, heed those familiar and inspiring lines from Addison's "Cato":

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[2] The Children's Division of the New York Post-Graduate Hospital, 1890; Forum, March, 1894; Arch. Pediat., April, 1905.

'Tis not in mortals to command success;
But we'll do more, Sempronius—we'll deserve it.

AUSCULTATORY BLOOD PRESSURE DETERMINATION

A SOURCE OF POSSIBLE ERROR *

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We desire to call attention to a phenomenon which we have noted in the course of routine blood pressure determinations by the auscultatory method. It has doubtless been observed by others, but so far as we know there is no mention of it in the literature.

It will be recalled that Korotkoff, in first describing the auscultatory method of blood pressure determinations, called attention to the fact that in lowering the pressure in the cuff from above the systolic pressure down to zero a succession of sounds was heard over the artery below the cuff. The initial sound, first audible when the cuff pressure corresponded to the systolic pressure, was of a sharp, tapping character, which, as the pressure in the cuff continued to fall, changed into a loud hum; then, still later, into a tapping sound again and finally into silence. Later observers divided this return of the tapping sound, or "third phase," into two distinct parts, a longer portion corresponding to a sharp tapping, and a shorter portion in which the sharp sound becomes suddenly soft and muffled. In a former article we offered proof of the fact that the incidence of this muffled sound or "fourth phase" marks the diastolic pressure.

Our present observation has to do with the humming or roaring sound of the second phase. In a certain number of cases of hypertension, which we estimate roughly at 5 per cent., the humming sound of the second phase is very feeble or may be replaced by a period of complete silence, so that most careful concentration on the part of the observer may fail to detect any sound. The sharp tap of the third phase sets in rather suddenly and, as the cuff pressure continues to fall, the third and fourth phases follow the usual course.

We believe that the occasional variation is of considerable practical importance, and that the unwary observer may be led into distinct error by disregarding the possibility of its occurrence. The usual technic of obtaining the systolic pressure, by the auscultatory method, is, after properly adjusting the cuff and placing the stethoscope in position, to raise the pressure quickly in the cuff, giving passing attention to the tapping sounds that are produced as the pressure ascends above the diastolic, and to stop the inflation as soon as the tapping is no longer noticed. Now in those cases in which the second phase is marked by complete silence, the inflation is very likely to be stopped at this point, the pressure being then gradually lowered and the beginning of the third phase incorrectly noted as the systolic pressure. When the blood pressure is very high, this source of error may lead the observer to recognize only a moderate hypertension. In cases of moderate hypertension, on the other hand, this point will correspond approximately to normal systolic pressure, and the error may not be suspected unless a somewhat high point for diastolic pressure puts the observer on his guard.

The means of avoiding this pitfall is plain. We always make a preliminary, approximate estimate of the systolic pressure by the palpatory method, and subsequently a more accurate determination by auscultation, being careful to raise the pressure above the point of systolic pressure as perceived by the palpating finger. In this way an error, which would often amount to as much as 50 mm. of mercury, may with certainty be avoided.

We are in doubt as to the explanation of this anomalous second phase. Its occurrence is certainly not dependent on the absolute height of the systolic pressure, but may bear some relation to the thickness of the arterial wall. In general, the more rapidly the entire estimation is made, the less apt one is to meet this period of silence. If the pressure in the cuff is raised to a point above the systolic pressure and then slowly lowered, the second phase will be replaced by a period of silence more frequently and more completely if the observer lingers about the point of systolic pressure, in an attempt to estimate the latter accurately, than if the cuff pressure is allowed to drop steadily and somewhat rapidly.

Erlanger recently suggested the following explanation of this phenomenon:

> It is possible to arrange a compression chamber and stethoscope on the isolated femoral artery of the dog so that the Korotkoff sounds can be followed just as in blood pressure observations in man. If with this arrangement the artery below the stethoscope be temporarily occluded while the compressing pressure is held stationary at a level at which the sounds are in the first or second phases, it is found that the sounds became fainter and often disappear.[1] Experiments, the reports of which have not yet been published, indicate that this disappearance of sound is due to the forcing open of the lower end of the compressed artery by the blood which accumulates in the blind end. The sounds do not disappear when the artery is occluded while the third or fourth phase sounds are in evidence.
>
> If it is permissible to assume that the hypertension in those cases in which this phenomenon is observed is the result of a high peripheral resistance, the conditions which determine the disappearance of sound in the dog would be supplied in man. During decompression, the sounds of the first phase would disappear as usual; but during the second phase, when the volume flow of blood into the lower artery becomes fairly rapid, the pressure there, owing to the high peripheral resistance, might mount to such a height as to open up the lower part of the artery within the compression chamber. The sounds might then disappear. They would reappear only when the more intense sounds of the third phase developed. This explanation finds considerable support in the fact that in these cases the period of silence is less apt to occur when the decompression is rapid than when it is slow; for it is obvious that slow decompression would favor engorgement of the peripheral artery.

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* From the Department of Internal Medicine, Washington University Medical School.

[1] Erlanger, Joseph: Am. Jour. Physiol., 1916, 40, 113.

DIPHTHERIA IN A SCHOOL FOR THE DEAF AND DUMB

REPORT OF AN OUTBREAK

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Nov. 8, 1916, I was requested by the state board of health to go to Delavan, Wis., to determine what was necessary to be done in connection with a number of cases of diphtheria which had occurred in the School for the Deaf and Dumb, located there.

I found on investigation that, since the opening of school, there had been an unusual number of cases of sore throat among the pupils, but not being severe, they were all diagnosed as tonsillitis, with the exception of seven, which were in special quarantine, and under treatment for diphtheria.

In the institution there were 200 pupils, varying in age from 3 to 20 years, and fifty others, teachers and help, who either lived in the institution or came back and forth from the town daily.

The place was immediately quarantined. Schick's test, together with nose and throat cultures, was decided on. The plan was to immunize with antitoxin all who gave a positive Schick test and to isolate all who gave a positive culture to diphtheria bacilli, in either the nose or throat, until two successive cultures, taken three days apart, were negative.

RESULTS OF TESTS *

Case No.	Throat Culture		Nose Culture		Schick Test
	Diagnosis	Release	Diagnosis	Release	
57038	—	—	+	—	—
57082	+	+	—	+	+
57116	—	—	+	—	—
57136	+	—	+	+	+
57147	+	—	+	—	—
57240	+	—	+	+	—
57300	—	+	+	C	+
57302	+	—	+	—	+
57338	+	+	+	—	—
57396	+	+	+	+	+
57423	—	+	+	+	+
58712	+	+	+	+	—
57020	+	—	+	—	—
58082	+	+	—	+	—
57616	+	—	+	—	+
57286	—	—	+	—	—
57978	+	+	+	+	—
57976	—	—	+	+	—
57312	+	—	+	—	—

* In this table, + = positive; — = negative; C = contaminated.

Accordingly, 250 tests were made, and a nose and throat culture taken from each person. Of this number, 151 gave a positive reaction to Schick's test, and were, therefore, given an immunizing dose of antitoxin, while nineteen gave a positive culture for diphtheria bacilli and were isolated.

After the immunization of the nonimmunes and the isolation of those giving positive cultures, no other cases of diphtheria developed.

It has been interesting to note the relation of the nose and throat with reference to the results of the cultures, positive or negative, and to see how those giving positive cultures to diphtheria bacilli reacted to Schick's test. The accompanying table shows these results.

Of those patients giving a positive culture to diphtheria bacilli, only thirteen showed the organism in the throat, while in seventeen cases bacilli were found in the nose at the time of diagnosis; in two cases, the throat culture became negative before that of the nose.

It will be seen further that, of those who gave positive cultures, seven gave a positive and twelve a negative Schick test, thus indicating that the seven without an immunizing dose of antitoxin would soon have come down with diphtheria, and that the twelve, while being immune themselves, could pass the disease on to others.

THE PROVOCATION OF THE LUETIN TEST IN NONSYPHILITIC PATIENTS *

H. N. COLE, M.D.
AND
H. V. PARYZEK, M.D.
CLEVELAND

An exact cutaneous test for syphilis is greatly desired by syphilologists. From a practical diagnostic standpoint, an easy, exact and cheap cutaneous test for syphilis is a thing much to be hoped for.

As early as 1909, Charlet, Gautier, Favre and Nicholas had experimented with congenital syphilitic liver extract, which they termed "syphilin," and like experiments had been tried in Neisser's and Jadassohn's clinics and in several others. Fischer and Klausner, with the same idea, had also worked with "pallidin," a suspension made from pneumonia alba (the lungs of congenital syphilitics rich in *Spirochaeta pallida*).

Noguchi's report on his luetin reaction was received, therefore, with satisfaction, and the test is used quite extensively in this country and more or less abroad.

In attempting to explain its mechanism, Neisser noted that the skin of patients with late syphilis reacted not only to the luetin test but also with many other foreign bodies. On their being injected intradermally, there was a reaction much like the luetin test which Neisser termed an *Umstimmung* of their skin. Boas and Ditlevsen[2] have reported that they were able to produce the luetin reaction with gonococcal and colon bacillus suspensions in late syphilis without a gonorrheal infection or gastro-intestinal symptoms being present. They also found that with the "luetin control," which contains the culture mediums of agar-agar and ascitic fluid but no *Spirochaeta pallida*, in a series of tertiary and hereditary syphilitics, they were able to obtain nearly as many positive reactions as had been found with the luetin itself, and of almost the same intensity.

This *Umstimmung* of the skin of patients with old syphilis is not enough in itself to discredit the luetin reaction as a practical therapeutic test; but it might be found that these patients would react to some cheap substance in a way which would be of great help in diagnosis and guidance in treatment, especially if normal persons did not so react. This, however, is the especial criticism that we wish to raise. In the first place, Boas and Stürüp,[3] in 1914, working with an extract of chancroidal bubo, found that they were able to achieve Klausner's results with pallidin. Secondly, a number of workers, including ourselves, have

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* From the Department of Dermatology and Syphilis of Western Reserve Medical School and Lakeside Hospital.

* This investigation was undertaken at the suggestion of the Committee on Therapeutic Research of the Council on Pharmacy and Chemistry of the American Medical Association.

1. Noguchi, Hideyo: Jour. Exper. Med., 1911, **14**, 557.
2. Boas and Ditlevsen: Arch. f. Dermat. u. Syph., 1913, **116**, 852.
3. Boas and Stürüp: Arch. f. Dermat. u. Syph., 1914, **120**, 730.

A "LUETIN" REACTION IN SYPHILIS PRODUCED BY AGAR

WITH A BRIEF CONSIDERATION OF ITS MECHANISM *

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ROCHESTER, MINN.

The enthusiasm with which cutaneous tests for diagnostic purposes have been incorporated into clinical practice is a striking tribute to the uncritical frame of mind in which we are prone to receive what promises to present the golden combination of simplicity and usefulness. Few better illustrations of this ready acceptance of the plausible as gospel could be found than the reception accorded the luetin reaction.

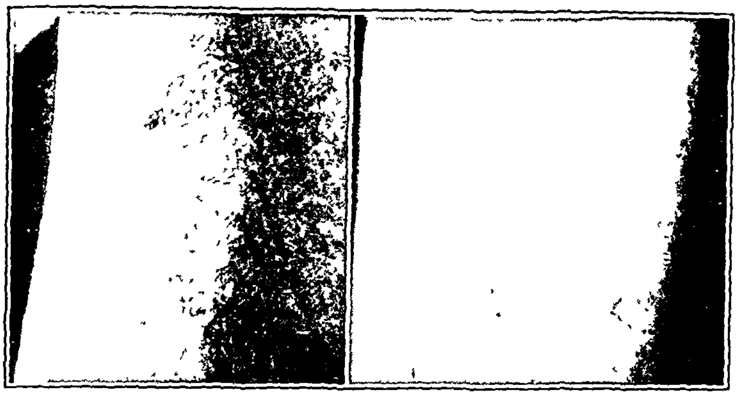

Fig. 1.—The positive (left) and negative (right) reactions to agar on the fourth day after injection of 0.1 c.c. of a 0.7 per cent. suspension. Both patients (women) had syphilitic periostitis and total inhibition Wassermann tests. The oil controls (indicated by the arrows) are negative.

Before Sherrick[1] noted the effect of iodids on the reaction, the literature was flooded with favorable, but now almost worthless reports, from a large percentage of which it is impossible to determine what controls were used and in which controls were even admittedly dispensed with. Here and there more critical observers called attention to the uncertainties of the reaction, and to the behavior of some of the control suspensions distributed with authentic Noguchi preparations of luetin. My own interest in the specificity of the reaction and its possible mechanism was first aroused by the production of a very convincing luetin reaction in a case of late syphilis in which I was studying the sensitization phenomena of psoriasis by means of intradermal injection of an emulsion made from normal skin. Following this I discovered to my surprise that as the apparent result of a series of injections of homologous protein emulsions made from our own skins, my skin and that of my assistant reacted to a typical colloid (agar) in a way clinically identical with the tardive luetin reaction.[2] This sensitivity apparently diminished slowly after the experiments were discontinued. Having in the meanwhile developed a theory of the mechanism of such reactions based on the newer physicochemical conceptions of anaphylactic phenomena, founded on the work of Bordet, Mutermilch and Kopaczewski, Keyser and Wassermann, Jobling and Petersen, Novy and DeKruif and others, I undertook to see whether a typical colloid suspension, whose properties as an anaphylatoxin-former were well understood, would give rise to reactions like the luetin reaction, in states of dermal hypersensitivity such as we know to exist in a certain percentage of syphilitics. The purpose of this paper is to report the success of the attempt based on these theoretical considerations, the fuller consideration of the significance of the result being deferred for a future paper. Sherrick[1] and Kolmer[3] have both noted that a reaction occurred under potassium iodid, but neither has observed its reaction when potassium iodid has not been administered, possibly because of its slow development, which sometimes calls for a period of observation of not less than fourteen days fully to identify a positive reaction.

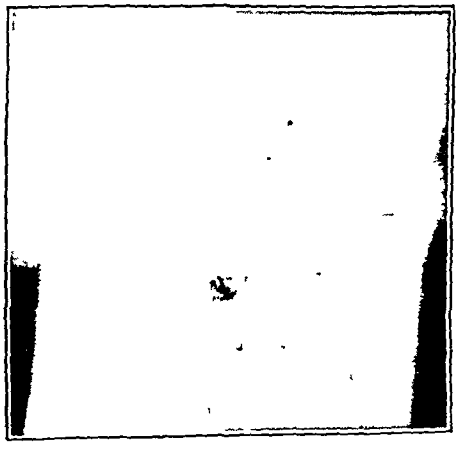

Fig. 2.—The positive shown in Figure 1 (left), on the eighth day. Hemorrhagic pustule.

Agar presents the striking advantage over many of the bacterial protein suspensions, toxins, etc., used for intradermal tests, that its behavior in vitro and in vivo has been fairly well worked out in the development of newer immunologic conceptions. It has been shown with reasonable definiteness that as a colloidal suspension it is able, by an absorptive action, to render homologous serums, which are supposedly nontoxic, extremely toxic, and that this effect is related to the colloidal properties of blood serum. This generation of anaphylatoxin by agar, its ability to disturb colloidal equilibrium along certain constant lines without itself being broken up or subjected to chemical change, makes it a very favorable medium for the study of the colloidal equilibrium of tissues in normal and disease conditions. The ability to show that agar in proper concentration, intradermally injected, gives rise, in states of dermal hypersusceptibility, to inflammatory reactions clinically similar to the luetin reaction, suggests that the mechanism of luetin is at least in part physical and not chemical. Moreover, it is possible that the hypersensitiveness which permits of such a reaction is also a physical state, the peculiarities and

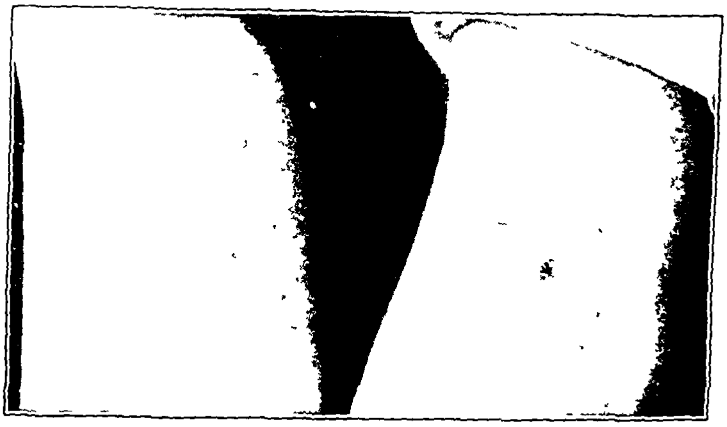

Fig. 3.—The reactions shown in Figure 1 on the ninth day: right, positive; left, negative.

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* From the Section of Dermatology and Syphilology, Mayo Clinic.

[1] Sherrick, J. W.: The Effect of Potassium Iodid on the Luetin Reaction, The Journal A. M. A., July 31, 1915, pp. 404-405.

[2] Stokes, J. H: Studies on Intradermal Sensitization, II, An Intradermal Reaction to Agar and an Interpretation of Intradermal Reactions, Jour. Infect. Dis., 1916, 18, 415-436.

[3] Kolmer, J. A.; Matsunami, Toitsu, and Broadwell, Stuart: The Effect of Potassium Iodid on the Luetin Reaction, The Journal A. M. A., Sept. 2, 1916, pp. 718-719.

origin of which can be worked out along physical lines of investigation. As a result of my studies of the behavior of this substance when substituted for luetin, I am inclined to regard the hypersensitiveness of the skin in late syphilis, familiarized as *Umstimmung* by the studies of Neisser, Finger and Landsteiner and others, as a colloidal phenomenon, and to regard the action of luetin largely as that of a mixture of colloids, the adsorbent action of which makes possible the liberation of anaphylatoxin in the tissue in which it is injected, with a resulting inflammatory reaction about the site of injection. Critical analysis of the composition of luetin as originally prepared by Noguchi[4] justifies this belief, since the anaphylatoxin-forming properties of ground *Spirochaeta pallida* have been demonstrated[5] as well as those of agar. To justify this theory it remained to show that, independent of the influence of iodids, a reasonable percentage of syphilitics would react to a colloidal adsorbent in suitable concentration in a way clinically similar to the luetin reaction. While the series of cases here reported is not large, it certainly suggests that there is a hitherto only partly appreciated element of nonspecificity in this reaction. It is not proposed to attack the clinical serviceability of luetin in the diagnosis of obscure syphilis, or to propose agar as a substitute without considerably more study. On the other hand, it cannot but give us pause in our enthusiasm for the diagnostic value of luetin and its immunologic significance to find that not only can the reaction be utterly invalidated by a little potassium iodid, but that it can be perfectly imitated by a sterile colloidal suspension which experimental studies seem to indicate remains chemically inert and acts presumably only through its physical properties. The reaction to agar as here described was negative in a variety of nonsyphilitic conditions and in the normal persons on whom it was tried. It was mildly positive on five occasions in clinically and serologically nonsyphilitic persons, two of whom, however, had gonorrheal arthritis, and three of whom had been receiving massive injections of vaccines, the ability of which to alter the colloidal state of the body and bring about so-called ferment mobilization has been suggested by the work of Jobling and Petersen[6] and others.

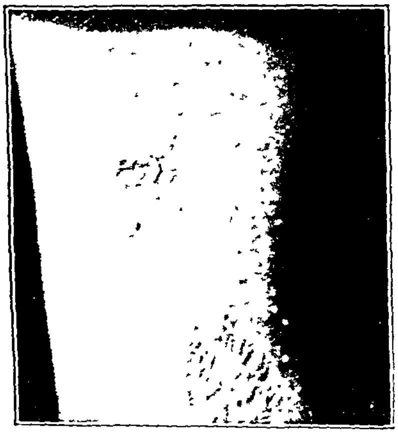

Fig. 4.—A positive reaction on the third day, which then subsided. Rated as doubtful and discarded. Hereditary syphilis with a negative Wassermann test.

The preparation used in my work has been a sterile 0.5 per cent. suspension of granular or powdered agar in physiologic sodium chlorid solution (unfiltered), sterilized in the autoclave. In more recent reactions I have used a 0.7 per cent. suspension. Several preparations of agar have been employed to eliminate the possibility of the presence of peculiarities due to the method of manufacture. The gel, undiluted, is injected intradermally in amounts of 0.1 c.c. An equal amount of mechanical trauma, inflicted by the injection of 0.1 c.c. of sterile olive oil as a control, has failed thus far to produce any positives, even when the agar reaction is positive. The course of the reaction is quite similar to that of luetin, with emphasis on the tendency to tardive reaction. Pustulation occurs, in marked cases, usually after the fifth day, and often as late as the tenth or twelfth. The pustule is rather more hemorrhagic than the typical luetin lesion, and occasionally bullous. Cultures from the fluid in several lesions and microscopic examinations have shown it to be sterile. There is a distinct variation in the intensity of the reaction with the concentration of the agar, and it is my impression also that certain obscure properties of the colloid suspension, such as may result from shaking it before it has gelled, and chilling it affect its behavior. Even though they seem to have been made up in the proper percentage strength, preparations occasionally give unsatisfactory results, especially when they are thin and watery or very flocculent. Variations of this type can scarcely have been avoided in the manufacture of luetin, and may explain the occasionally erratic behavior of even authentic preparations.

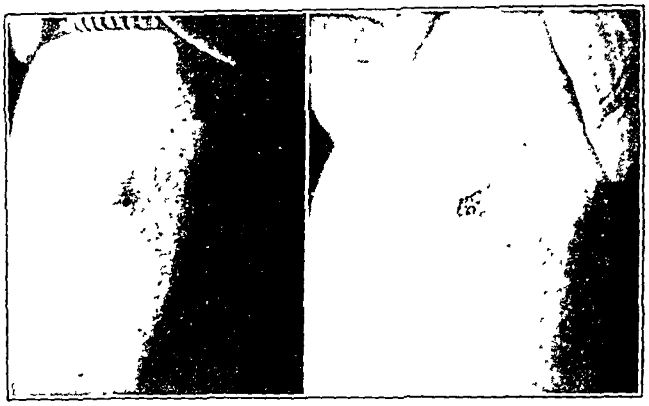

Fig. 5.—A reaction which was positive on the third day, subsided and lighted up again on the eighth; left, pustulobullous lesion on the eleventh day; right, ruptured and drying pustule on the fourteenth day. Tabes dorsalis, blood Wassermann test positive, no iodids.

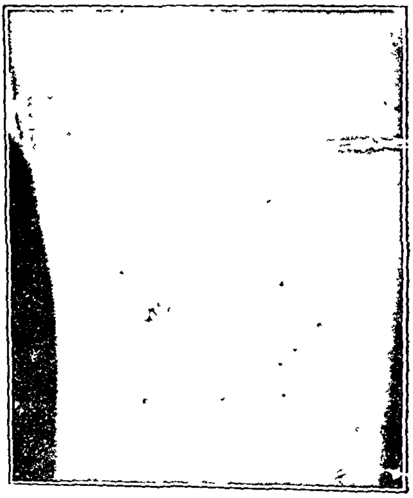

Fig. 6.—Drying pustule on the ninth day in latent syphilis with a positive Wassermann test. Mercuric succinimid intramuscularly, and salvarsan; no iodids.

It must be apparent that luetin, as a marketable preparation for the diagnosis of syphilis, is an uncertain entity and that, to say the least, it needs standardization.

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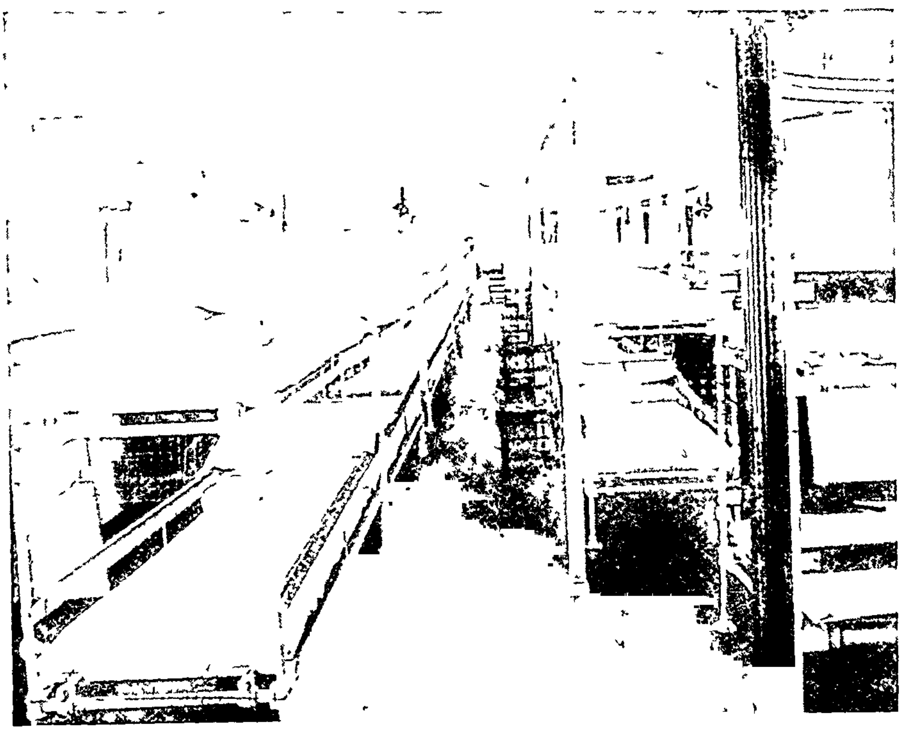
[4] Noguchi, N.: A Cutaneous Reaction in Syphilis, Jour. Exper. Med., 1911, **14**, 557-568.

[5] Nakano, H.: Ueber Kutireaktion bei Syphilis, Part I, Arch. f. Dermat. u. Syph., 1913, **116**, 281-312.

[6] Jobling, J. W., and Petersen, William: The Nonspecific Factors in the Treatment of Disease, THE JOURNAL A. M. A., June 3, 1916, pp 1753-1756.

camps and base hospitals occupy the field of mental vision, and the ocean and ships are somewhere far over the mental horizon. It is my purpose, therefore, as briefly as possible, to outline a concise statement as to where we should look for aid, and what circumstantial, national and other considerations must direct us.



Ward aboard the Hospital Ship *Relief*, utilized by the army as a hospital ship during the war with Spain, and later taken over by the navy. She is now unseaworthy, but is still used for hospital purposes at the Naval Station, Olongapo, P. I.

To begin with, the fighting ships of the navy must be built before war descends on us. The protection that stands between our coasts and an enemy from over the sea is vested in the navy. Of all our frontiers, our ocean frontier is the greatest. Against an over-sea enemy the navy is the first line of defense. Our strength or our weakness at the beginning of hostilities will decide whether or not the invader can secure a foothold on our shores. What I wish to emphasize is that unlike an army, which can expand and expand as long as there is land to hold it and men to constitute it, the navy has limitations as to personnel and its requirements, limitations which can be quite accurately determined by the number of its fighting units before the outbreak of hostilities. It is not the number of men that constitutes a navy, it is the number of ships with trained men to man them. Battleships cannot be built in a day. The need for power on the sea, so far as our country is concerned, would be immediate. The navy must always be ready for war, not tomorrow, but today. For the navy that is unprepared there may be no tomorrow; for the personnel of such a navy tomorrow may be too late.

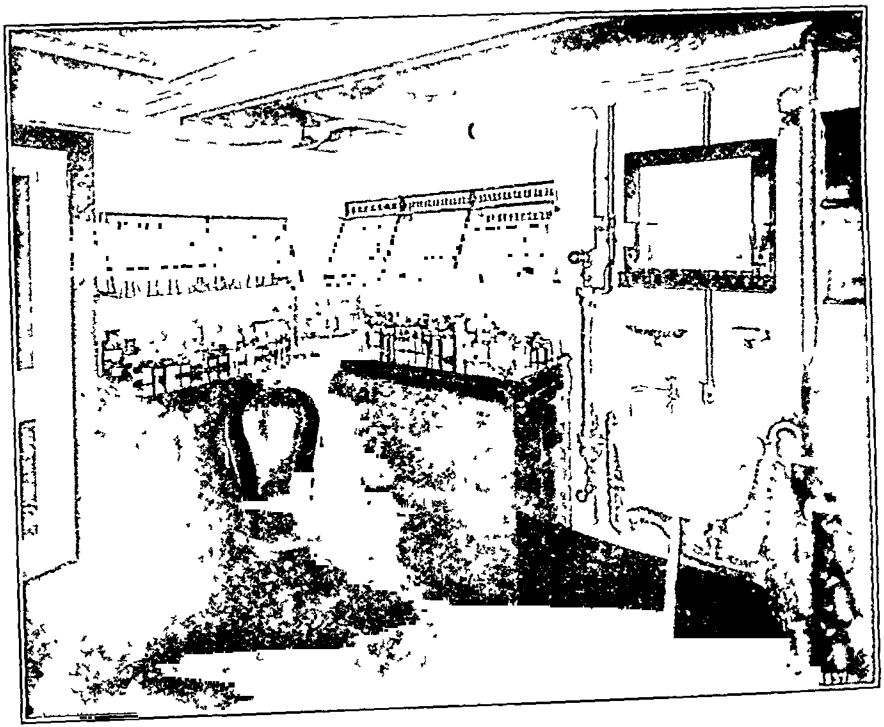
Our naval medical officers are a highly efficient body of specialists, always seeking the solution of the problems which are peculiarly theirs, and which belong to the man who must separate himself from normal or usual considerations. In the march of sanitary progress the naval medical officers have sought a place in the van. It is not, therefore, assistance in reorganizing the Medical Department of the Navy that we need, but assistance in organizing the civilian facilities outside of our sphere of naval influence to supplement the organization already a part of a great machine, so that when war comes, order and preparedness will take the place of confusion.

RECRUITING OFFICERS

We should first need to recruit our navy and marine corps to full strength. For this purpose, additional recruiting medical officers are lacking. Medical officers for our auxiliaries must be supplied. Auxiliaries are ships which carry supplies for the fleet — a sort of floating base which carries supplies of fuel, food and ammunition, and which contains ships employed as district scouts, ships employed with submarine and aeronautic activities of a district, and, not the least of these, the hospital ships.

To man most of these ships with medical officers we must look to our professional brethren who are now engaged in peaceful pursuits. The duties of the medical officer will take him on the ocean where his professional isolation is complete, and where he must solve from his own resources all the problems that may confront him. He should be a young man ready for any hardships, and possessing a large fund of temperamental compatibility.

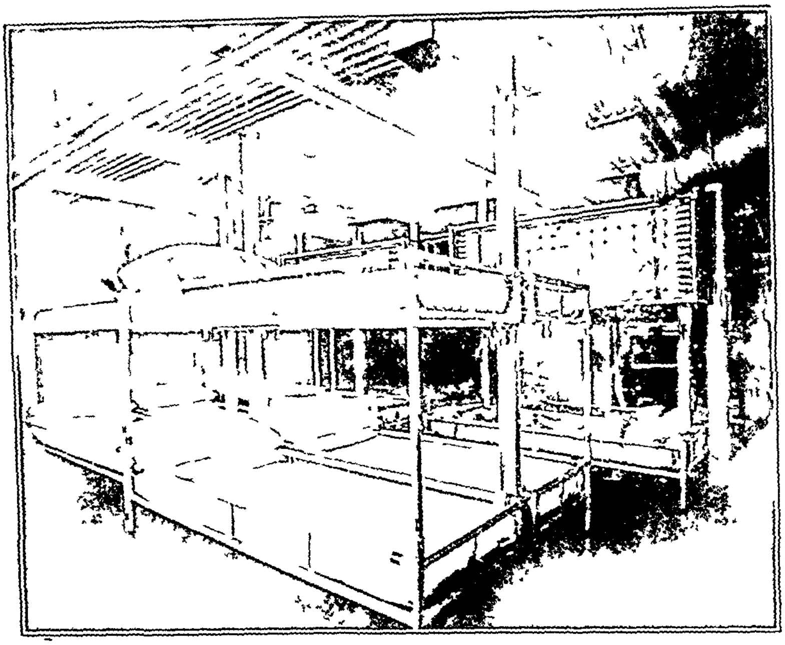
When our ships turn back from the sea bringing their sick and wounded, their destination will not be Chicago or St. Louis, but coast cities where we have our navy yards and stations, such as Boston, New York and Philadelphia, where the navy maintains navy yards and naval hospitals. As some of these hospitals may not be large enough to meet the requirements, we must look to the civilian hospital facilities at these places to help us out. Hence our interest is keen in the hospitals of these particular coast cities, and therefore



Dispensary aboard a battleship.

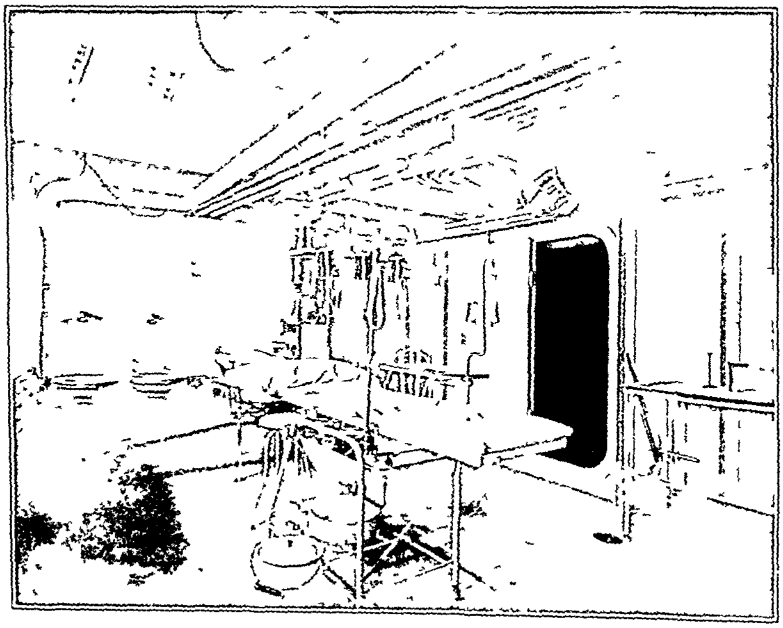
we have carefully compiled information of all the large municipal and private hospitals in these cities, tabulated, filed and kept up to date.

As not all of our bases promise such facilities as places like New York, Boston or Philadelphia, we have asked the Red Cross to organize five hospital units. We have requested that three of these units be organized on the east coast, preferably at Boston, New York and Philadelphia, and that two be organized on the west coast, preferably at San Francisco and Los Angeles



The sick bay of a battleship This is the name given to the hospital ward aboard a ship of the navy. These spaces vary in size from a compartment containing half a dozen bunks to a large compartment containing sometimes as many as forty bunks

I do not wish to convey the impression that all the interest of the navy in civilian hospital facilities is limited to hospitals adjacent to existing navy yards and stations, for this is not true. The navy defends the whole coast, so that every hospital on the east or west coast or adjacent to these coasts commands our special interest For purposes of defense the coast of the United States is divided into districts. Each of these districts has its scouts, submarines and ships of defense, its coast guard, and other district naval activities. Therefore a survey has been made and information compiled concerning all the important civilian hospitals in each naval district, so that these district ships and naval activities may know their district hospital facilities. In these hospitals we have the same keen interest that we have in the hospitals of those cities in which are located the large navy yards and stations — the home bases of our fleet in time of peace or war.



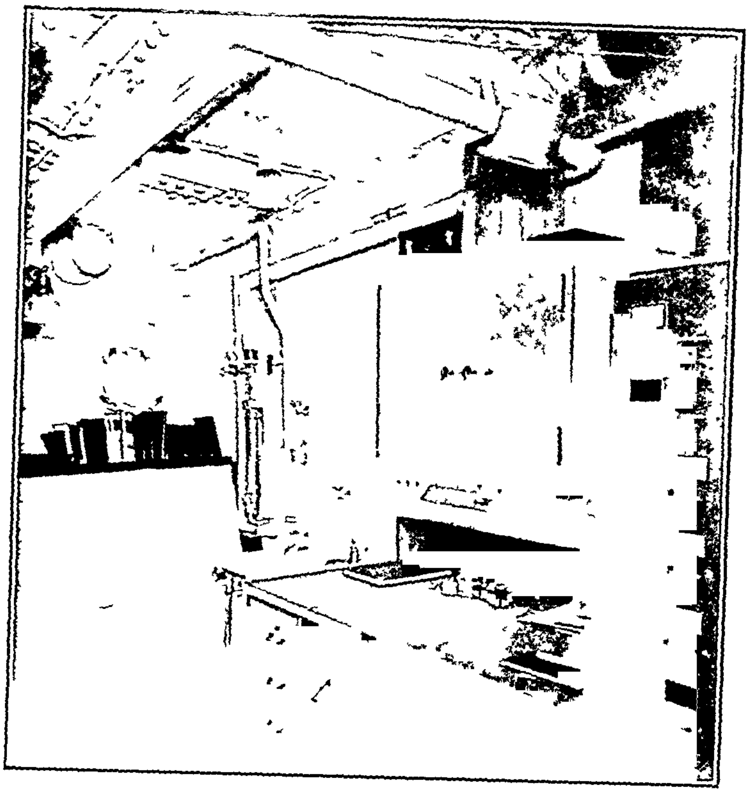
An operating room aboard a battleship This room is completely equipped with sterilizing equipment, consisting of dressing, utensil and instrument sterilizers.

NAVAL CASUALTIES

There are never the overwhelming numbers of wounded after a sea battle that there are after a battle on land, for a modern sea fight is not a fight among individuals, but a fight of ship against ship, a fight between monsters, a fight for annihilation, and we probably should come back as victors or not at all. Some authorities have placed the possible casualties in a naval battle of large fleets, including the rescued enemy, at 3,000 wounded, 5,000 being the outside number of those who would have to be cared for. Certainly no naval fight up to the present time has left the fleets with such a large number of wounded as this. But there would also be the usual morbidity which is experienced in time of peace, the result of exposure, and the hazard of life on the sea. No one can say when, how or where an enemy will strike, and it therefore behooves us to be ready to handle the results of morbidity and battle anywhere along our thousands of miles of coast, where the activities of the navy may take us.

New problems of warfare are confronting armies This may be illustrated by referring to Germany's western front. No longer do visible armies meet each other for a quick and decisive victory, but foes invisible to each other, encamped in dugouts and fighting from trenches, are carrying on a sort of subterranean warfare, terrible and ruthless. Not that the older type has passed away, for the eastern front of Germany and Austria has been characterized by sharp and decisive campaigns of rapidly advancing troops; but this new type of warfare has been added to the older. The value of cavalry and light artillery has not been destroyed.

And so, too, navies are confronting a new type of warfare. But this newer method of warfare has been added without destroying the power and usefulness of battleships. This added menace, like the new problems confronting armies, is invisible in its essentials. It is submarine in character. In place of the trench and dugout we have the submersible boat. Medical personnel must adjust its ideas to the newer type of warfare as well as to the older. Brilliant triumphs in surgery have little place here. Physical, chemical, bacteriologic and physiologic problems in their relation to the atmosphere and the human mechanism will demand careful consideration to insure the physical fitness and safety of the men who go down into the sea in these boats.



Surgeon's examining room aboard a battleship

THE SICK OF THE NAVY

The sick of the Navy and Marine Corps are cared for solely by the medical officers of the service. There are two classes of medical officers; those who enter the regular service and adopt it as a calling for life and those who enter in a reserve capacity for four years at a time, obligating themselves to go on active duty at the call of the president.

PRELIMINARIES FOR APPOINTMENT

The preliminaries for appointment differ principally in the character and scope of the professional examination, which is more searching in the case of those coming in permanently, and due to go to the Naval Medical School for instruction and after this course to be examined, graded and commissioned in the regular service.

The regular medical corps of the navy today has nearly 400 officers. There are now nearly 300 vacancies, as the numerical strength of the corps has recently been fixed by law at 0.65 per cent. of the total strength (officers and men) of the Navy and Marine Corps, including midshipmen. Automatically, each increase in the total authorized strength brings with it proportionate increase in number of medical officers.

The lower grades of the Medical Corps advance in rank from time to time along with the officer of the line with whom they take precedence up to the grade of lieutenant commander (corresponding to major in the army). The new law authorizes that 0.5 per cent. of the Medical Corps shall be medical directors with the rank of rear admiral, 4 per cent. shall be medical directors with the rank of captain (corresponds to colonel in the army), 8 per cent. shall be medical inspectors with the rank of commander (corresponds with lieutenant-colonel in the army).

QUALIFICATIONS

A candidate for appointment in this corps must be between the ages of 21 and 32 years, must be a citizen of the United States, and must submit satisfactory evidence of preliminary and medical education. Original appointment in the medical corps is made only in the grade of assistant surgeon. For each advance in rank and grade the candidate is required to undergo a physical and professional examination. The examination for appointment is in two stages. The first examination qualifies the applicant for appointment in the Reserve Force. If successful the candidate then, on full pay, attends a course of instruction at the Naval Medical School, at the end of which course he appears for final examination for appointment in the Medical Corps. The pay of the various grades of the Medical Corps is given in the accompanying table.

The physical examination is thorough and the candidate is required to certify that he is free from all mental, physical and constitutional defects.

Acuteness of vision $^{12}/_{20}$ for each eye, unaided by glasses, but capable of correction by aid of lenses to $^{20}/_{20}$, is obligatory. Color perception must be normal and the teeth good.

Surgeon General William C Braisted, United States Navy.
[Copyright by Harris & Ewing]

If the candidate is found to be physically disqualified, his examination is concluded, but in the case of a candidate otherwise desirable the medical examiners may recommend that minor disqualifications or departures from standard be waived and proceed with the professional examination, subject to final approval by the department; if found to be physically qualified, his professional examination is continued as follows:

1. Letter to the medical examiners, giving a brief statement of the candidate's general and professional education.

2. Written examination (*a*) anatomy, (*b*) physiology, (*c*) materia medica and therapeutics, (*d*) general medicine, (*e*) general surgery, and (*f*) obstetrics. Two or more questions are asked in each subject.

3. An oral examination is conducted in each of the above enumerated subjects.

4. The medical examiners will give careful consideration to composition and spelling as shown in the written papers submitted by the candidate.

5. As a general average, 75 per cent. is required.

With the consent of the medical examiners a candidate may withdraw at any time from further examination and may at a future time present himself for reexamination provided such examination is not delayed until after the date his permit would expire.

No allowance will be made for the expenses of candidates appearing for examination.

After approval of the record of examination and the recommendation of the medical examiners in the case of a qualified candidate the Bureau of Medicine and Surgery will recommend to the Bureau of Navigation the provisional enrolment of the candidate in the United States Naval Reserve Force.

The final physical examination is thorough in character. No person will receive an appointment whose physical condition may indicate the possibility of early retirement for disability.

PAY AND ALLOWANCE TABLE

Grade, Rank, and Length of Service	Pay per Annum on Shore	Allowances per Annum for Quarters*	Total Pay per Annum on Shore	Pay per Annum at Sea
Asst. surg., passed asst. surg., and surg.:				
Rank of	$2,000	$432	$2,432	$2,200
Rank of	2,400	576	2,976	2,640
After 5	2,640	576	3,216	2,904
After 1	2,880	576	3,456	3,168
After 1	3,120	576	3,696	3,432
Rank of	3,000	720	3,720	3,300
After 5 years' service..............	3,300	720	4,020	3,630
After 10 years' service..............	3,600	720	4,320	3,960
After 15 years' service..............	3,900	720	4,620	4,200
After 20 years' service..............	4,000	720	4,720	4,400
Medical inspectors, rank of commander:				
After 15 years' service..............	4,500	864	5,364	4,950
Medical directors, rank of captain:				
After 15 years' service..............	5,000	1,008	6,008	5,500
Medical directors, rank of rear admiral:				
Lower half	6,000	1,152	7,152	6,600
Upper half	8,000	1,296	9,296	8,800
Surgeon general, rank and pay of rear admiral				

* Both within and (on shore duty) beyond the continental limits of the United States, but only when quarters are not furnished by the government.

Note.—There are also liberal allowances for fuel and light on shore at home and beyond the continental limits of the United States, the amount varying according to rank, season, and the latitude of the station at which the officer is serving.

The school examination will be on the subjects embraced in the course of instruction, such as naval and general hygiene, naval and operative surgery, tropical medicine and pathology, medical zoology, practical chemistry, bacteriology and serology, ophthalmology, Naval Regulations, Hospital Corps drills, and duties of the medical officer afloat and ashore.

Members of each school class, on graduating from the Naval Medical School, will be commissioned in the order of merit as determined on their examination, but not in excess of the number of vacancies in the Medical Corps.

Since no officer can be commissioned in the Medical Corps who is over 32 years of age, permits to attend the course at the Naval Medical School will not be issued to applicants who cannot complete the prescribed course and obtain their appointment while within the age limit.

NAVAL RESERVE CORPS

The act of Aug. 26, 1916, provided for a naval reserve force. A candidate for enrolment as a medical officer is first examined for enrolment in the provisional grade of assistant surgeon, rank of lieutenant (junior grade), United States Naval Reserve Force. After his enrolment, should he so desire, he makes request for active duty for confirmation in grade, and after the completion of a minimum period of three months' active service (at sea) he is again examined and, if found qualified, is recommended for a commission as an assistant surgeon, United States Naval Reserve Force.

Legislation establishing the United States Naval Reserve Force contains in substance matter referable to commissioned grades in the Medical Corps as follows:

A member must be a citizen of the United States.

He obligates himself to serve in the navy throughout a war or during the existence of a national emergency declared by the president, should either arise during his term of enrolment.

Enrolment is for a term of four years.

In time of peace, and when no national emergency exists, a member may be discharged on his own request, on reimbursing the government for any clothing gratuity that may have been furnished during his current enrolment.

A provisional grade (assistant surgeon) is given to him on first enrolment, in accordance with his qualifications determined by examination.

On his own request, he may, after enrolling, be assigned to active duty in the navy for such periods of instruction and training as may enable him to qualify for and be confirmed in grade.

For confirmation in grade a member must serve the minimum amount of active service required (three months in one period, or in periods of not less than three weeks each year), and must qualify by examination under regulations prescribed by the secretary of the navy.

No one can be appointed or commissioned an officer in any rank in any class of the United States Naval Reserve Force, or promoted to a higher rank therein, unless he has been examined and recommended for such appointment, commission or promotion by a board of three naval officers, or until he shall have been found physically qualified by a board of medical officers to perform the duties required in time of war, except that former officers and midshipmen of the navy who shall have left the service under honorable conditions and who shall have enrolled in the United States Naval Reserve Force may be appointed in the grade and rank last held by them without examination other than the physical examinations herein prescribed.

A member receives retainer pay of $12 per annum while enrolled in the provisional grade, provided he makes such reports concerning his movements and occupation as may be required by the secretary of the navy. After confirmation in grade, his annual retainer pay is two months' base pay of the corresponding rank in the navy. Retainer pay is in addition to any pay to which a member may be entitled by reason of active service. Members of the Volunteer Naval Reserve do not receive any retainer pay.

A member who reenrolls for a term of four years, within four months of expiration of last complete enrolment, and who has performed the minimum amount of active service required during the preceding term of enrolment, for each reenrolment receives an increase of 25 per cent. of his base retainer pay. A member who completes twenty years of service, and who has performed the minimum amount of active service during each term of enrolment, on his own application will be retired with rank held, with a cash gratuity equal to the total amount of his retainer pay during his last term of enrolment.

Employment may be accepted in any branch of the public service, except as an officer or enlisted man in any branch of the military service of the United States or any state thereof.

A member is subject to the laws, regulations and orders for the government of the regular navy only during such time as he may by law be required to serve in the navy in accordance with his obligation, and when on active service at his own request, and when employed in authorized travel to and from such active service in the navy.

A distinctive badge or button will be issued to be worn only by members of the United States Naval Reserve Force. A penalty is assigned for unauthorized persons to wear or use this emblem.

A man actively employed receives the same pay and allowances, gratuities and other emoluments as an officer of the naval service on active duty of corresponding rank and of the same length of service (see pay table quoted above). When not actively employed, he is not entitled to pay, bounty, gratuity or pension, except as expressly provided by the provisions of the act.

When first reporting for active service for training during each period of enrolment, each officer is credited with a clothing allowance of $50, excepting in the Volunteer Naval Reserve. In time of war or national emergency he is credited with $150, less the amount previously credited, if any, during the current enrolment. The various grades not above lieutenant commander in rank, corresponding to those in the navy, are allowed. Officers in the United States Naval Reserve Force rank with, but after, officers of corresponding rank in the navy, and are commissioned by the president.

Medical officers enrolled in the United States Naval Reserve Force shall be appointed in time of peace not to exceed 500 in number. To provide for promotion, those who reenroll within four months after the termination of each enrolment, and who have performed the minimum amount of active service required (at sea) in each enrolment, may receive promotion to the rank of lieutenant on third enrolment, and to the rank of lieutenant commander on the fifth, on performing the minimum amount of active service required (at sea) in the new enrolment, provided they are found on examination qualified physically and professionally.

While the greater number of naval medical reserve officers will probably be needed at sea, some might be detailed to duty on shore—for a time at least—in connection with recruiting and the various medical activities at one of the large navy yards or stations. A naval medical correspondence course has been established at the Naval Medical School, Washington, D. C., to prepare these reserve officers for their duties. For duty at sea they may be assigned as junior medical officers of battleships or on board scouts or cruisers, or aboard any of the various types of auxiliaries which are employed in connection with fleet or district activities.

The life in the fleet calls for the best young manhood of the medical profession. The duty is stimulating, and one lives among men who have high traditions to preserve, although there is often isolation from a professional standpoint, and the best qualities of professional courage and ingenuity are sometimes needed. Not infrequently there is opportunity for rare adventure. The medical officer living among messmates whose life is devoted to the work at hand grows to realize that he is a constituent part of a mighty machine consecrated to the defense of the nation.

Bureau of Medicine and Surgery, Navy Department.

Therapeutics

HEXAMETHYLENAMIN IN THE PYELITIS OF INFANTS*

Probably few drugs have come into such vogue as has hexamethylenamin for the treatment of infections of the urinary tract. Properly administered, it undoubtedly yields satisfactory results in these conditions. There appears to be danger, however, that this widespread use of the drug encourages its administration without complete regard for the indications and contraindications. According to Useful Drugs:[1]

> It is of great value as a prophylactic in operations on the urinary organs. It is valuable in cystitis, pyelitis, etc. It is employed as a prophylactic in the bacilluria of typhoid fever. Some advocate its routine use to prevent the occurrence of this complication. It has been recommended to prevent the onset of nephritis in scarlet fever. As it has produced albuminuria and hematuria in some cases, it should be used with caution in cases in which inflammation of the kidney is present or anticipated.

It is evident, then, that there is something contradictory in the recommendation of the use of this drug to prevent the onset of nephritis and the statement that it has produced an albuminuria and hematuria in some cases. Confirmatory evidence is offered by Dr. I. A. Abt,[2] who says in a discussion on pyelitis in infancy:

> Of the various drugs that have been recommended, hexamethylenetetramin (urotropin) has probably been most generally used. I would, however, recommend a word of caution concerning its use. It should be under continuous observation and its use should not be continued for an extended period. The urine should be frequently examined for blood. I have more than once seen severe and fatal nephritis which in my opinion was due to the overuse of urotropin. If urotropin is given to infants under 1 year of age it should be administered in 1-grain doses followed by water. This may be repeated four or five times daily.

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* Owing to lack of space, the article on "Disturbances of the Kidneys" is omitted from this issue of The Journal. It will appear next week.

[1] Useful Drugs, Chicago, American Medical Association, 1916, page 77.

[2] Abt, I. A.: Pyelitis, Medical Clinics of Chicago, 1917, 2, 904.

STATE BOARD STATISTICS FOR 1916

ANNUAL PRESENTATION BY THE COUNCIL ON MEDICAL EDUCATION OF RESULTS OF STATE BOARD EXAMINATIONS

On pages 1102 to 1111 are three tables, A, B and C, giving in detail the results of the various state medical license examinations held during 1916. Full reports were obtained from all state licensing boards and were carefully verified.

Tables A and B, when read from left to right, show (*a*) the number of graduates appearing for examination in each state, (*b*) whether they passed or failed, (*c*) the total number examined during the year, (*d*) the number who passed, (*e*) the number who failed, (*f*) the percentage of failures, and (*g*) the number of states in which graduates of each school appeared for examination. Read from above downward, they give the results by states, showing (*h*) the number registered and rejected from each college, (*i*) the total number examined, (*j*) the total number registered, (*k*) the total number rejected, and (*l*) the percentage of rejections. The fact that the majority of graduates take the license examination in the state in which the college is located is shown by the dark diagonal zone made by the grouping of figures passing from the upper left to the lower right corner of each table. This shows also that *the states in which low-grade medical schools are permitted to exist are themselves the recipients of the greater portion of the ill-trained output of such schools.* These tables are worthy of careful study, since important deductions are possible. The marginal numbers will enable one to follow readily the line for any college.

Caution in Forming Conclusions

In making comparisons on the basis of these statistics, several factors should be kept in mind. The number examined is important, since, if all other conditions are equal, the larger the number of graduates examined, the more accurate is the finding. But other conditions are seldom equal. The number of states in which a school's graduates have been examined is important. The larger this number the more accurate will be the conclusions. Again, the character of the board making the examination and the methods employed are important factors to be considered, since some boards hold very careful examinations and include practical laboratory and clinical tests, or they may mark the papers more severely; while others, especially partisan boards, may be very lenient. In this connection it should be stated that, although conditions are undergoing a steady improvement, it is still true that *the character of the license examination as usually conducted is such that graduates of colleges conducted largely by quiz-class methods may easily be successful in passing it.* It is particularly important, in forming conclusions based on these statistics, to note for each college the states in which its graduates are not admitted to examination—information set forth with these statistics in Table D.

Graduates of All Years Examined in 1916

Table A shows the results for all candidates who took examinations in 1916, regardless of the years in which they graduated. This shows that altogether 4,850 candidates were examined last year, as compared with 5,313 in 1915, 5,570 in 1914, 6,435 in 1913, and 6,879 in 1912. There has been a steady decrease each year since 1906, when 8,035 physicians were examined. The decrease each year has been due largely to (*a*) the wider extension of reciprocity and (*b*) the general diminution in the number of medical colleges, students and graduates. Of those examined this year, only 15 per cent. failed, as compared with 15.6 per cent. in 1915, 21.6 per cent. in 1914, 18.6 per cent. in 1913, and 20.5 per cent. in 1912. This indicates improved medical teaching, since there is no reason to believe that methods of examination have been relaxed.

There were 89 medical colleges in the United States granting degrees in 1916 which had graduates examined, as compared with 93 in 1915, 96 in 1914, 99 in 1913 and 110 in 1912. This is a decrease of 64 since 1905, when 153 medical colleges in the United States had graduates examined. The figures regarding graduates of several medical schools which have ceased to exist, either through merger or otherwise, have been included in the line for miscellaneous colleges.

Foreign graduates were examined in twenty-one states, the total number being 78, and of this number 35, or 44.9 per cent., failed. The largest number of foreigners examined in any state was 15 in New York, where 11, or 73.3 per cent., failed. Graduates of Canadian schools were examined in twenty-two states, more appearing, naturally, in the borderline states. The figures for the Canadian colleges are given separately in order to show the number of candidates coming from each, and to show the successes of their graduates at the examinations. Altogether 48 candidates from Canadian colleges were examined, of whom 9, or 18.7 per cent., failed. Of all Canadian colleges, the University of Toronto had the largest number examined. The highest percentages of failures were for Laval University, 60, Queen's University, 33.3, and Western University, 25.

No Undergraduates Examined During 1916

This is the first year, since the tabulation of these statistics was begun, in which no undergraduates were examined. The number examined each year has been constantly diminishing since 1906, when 703 undergraduates were examined and 342 were licensed. Colorado is now the only state which will examine nongraduates, but only four have been licensed in that state in ten years. The door has been closed, therefore, against the admission to practice of those whose medical training is known to be incomplete.

Recent Graduates Examined During 1916

Table B gives the results for graduates of 1912 to 1916 inclusive examined during 1916. This table is important, since it deals with recent graduates, and is, therefore, the fairest basis for comparison between colleges. Of all candidates examined in 1916, 4,283, or 88.3 per cent., were recent graduates, and of this number 12.7 per cent. failed, as compared with 15 per cent. for all candidates.

Old Practitioners Examined During 1916

Table C is so arranged as to show in comparison the results for graduates of all years (first column), for recent graduates (second column), for graduates of 1911 and previous years (third column), and for graduates of 1916 (fourth column). Of the graduates of 1911 and previous years—"old practitioners"—567 were examined, and of this number 182, or 32.1 per cent., failed, as compared with 12.7 per cent. of failures for recent graduates. This high percentage of failures is due largely to the long time these candidates have been out of college and to the fact that they are required to take the same examination as recent graduates. The less favorable conditions in medical colleges at the time many of these physicians graduated also, doubtless, have some bearing on this result. Justice to such physicians, who have been licensed, but who, for good reasons, desire to change their locations, is a strong argument for interstate reciprocity in medical licensure for the use of practical examinations by which they may show their skill in diagnosis and treatment, or for special percentage allowances for years of active practice. The total number of these candidates is diminishing each year as increased reciprocity relations are established. As a rule, the states which do not have reciprocal relations with other states (as Florida, Montana, Massachusetts, Oregon and Washington, see Table I) examined the largest numbers of old practitioners.

Graduates of 1916 Examined During 1916

Table C also gives the results for the graduates of 1916 who were examined during the year by the state boards, and

CONTINUED ON PAGE

TABLE A—PHYSICIANS EXAMINED

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Alaska		3 Arizona		4 Arkansas		5 California		6 Colorado		7 Connecticut		8 Delaware		9 Dist. Columbia		10 Florida		11 Georgia		12 Idaho		13 Illinois		14 Indiana		15 Iowa		16 Kansas		17 Kentucky		18 Louisiana		19 Maine		20 Maryland		21 Massachusetts		22 Michigan		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA																																													
1	University of Alabama, School of Medicine	16	1																	1	0	1	0													1	1									1
	ARKANSAS																																													
	University of Arkansas, Medical Department					0	1	16	1																																			0	1	2
	CALIFORNIA																																													
3	College of Medical Evangelists									9	0																			1	0															3
4	College of Physicians and Surgeons, Los Angeles					2	0			23	0													1	0																					4
5	*College of Physicians and Surgs. of San Francisco*					1	0			6	1																																			5
6	Hahnemann Medical College of the Pacific.—H.									10	1																																			6
7	Leland Stanford Junior Univ., School of Medicine									22	0																																			7
8	Oakland College of Medicine and Surgery									2	0																																			8
9	University of California Medical School					2	0			31	0																																			9
	COLORADO																																													
10	University of Colorado, School of Medicine									1	0	12	0											1	0																					10
	CONNECTICUT																																													
11	Yale University, School of Medicine							1	0					5	1																													1	0	11
	DISTRICT OF COLUMBIA																																													
12	Georgetown University, School of Medicine			0	1							1	0	1	1			5	0											1	0											2	2	1	0	12
13	George Washington University Medical School					0	2			1	0			1	0			16	1																					1	0	2	0	1	0	13
14	Howard University, School of Medicine	0	1							1	0							1	3							2	1					2	0			1	0	1	0	1	1					14
	GEORGIA																																													
15	Atlanta Medical College	7	3																	19	2	93	1							1	0															15
16	Georgia College of Eclectic Med. and Surg.—E.							5	3																																					16
17	University of Georgia, Medical Department	1	0																	1	0	11	0																							17
	ILLINOIS																																													
18	Chicago College of Medicine and Surgery	0	2			1	0					1	0											1	0	138	20	3	0	6	0			1	0					0	1	3	2			18
19	Chicago Hospital College of Medicine																	1	0							3	6																			19
20	Hahnemann Medical College and Hospital.—H.							1	0	2	0															16	3			1	0	1	0													20
21	Jenner Medical College																									7	4																			21
22	Loyola University, School of Medicine	0	1			1	0	1	0	1	0			0	1					2	0	1	1			89	26			0	1			2	1	1	0			1	1	1	1			22
23	Northwestern University Medical School					2	0					1	0											2	0	40	2			6	0	1	0											2	0	23
24	Rush Medical College			1	0	3	0			5	0	2	0							0	1					79	2	1	0	9	0	1	0											2	0	24
25	University of Illinois, College of Medicine			1	0	2	0			1	0	0	1											2	0	98	1			5	0	1	0											2	0	25
	INDIANA																																													
26	Indiana University, School of Medicine																									1	0	33	2																	26
	IOWA																																													
27	State University of Iowa, College of Medicine																			1	0					3	0			28	0															27
28	State Univ. of Iowa, Coll. of Homeo. Med.—H.					1	0																																							28
	KANSAS																																													
29	University of Kansas, School of Medicine																															11	0													29
	KENTUCKY																																													
30	University of Louisville, Medical Department	1	0			0	1	1	0							1	0			0	1	1	0	1	0	2	2							30	2											30
	LOUISIANA																																													
31	Tulane University of Louisiana, School of Med.	9	0			1	0							1	0					5	0									1	0	2	0			51	0							1	0	31
	MAINE																																													
32	Bowdoin Medical School													1	0																							10	1			1	0			32
	MARYLAND																																													
33	Johns Hopkins University, Medical Department			1	0	1	0			3	0			0	1	1	0			1	0	1	0			2	0			2	0			1	0	1	0			37	2	4	0	1	0	33
34	Univ. of Maryland, Sch. of Med. & Coll. of P. & S.													1	1			2	1	1	0	2	0															1	0	41	14	7	1			34
	MASSACHUSETTS																																													
35	Boston University, School of Medicine.—H.									1	0															1	0											2	0			13	1			35
36	College of Physicians and Surgeons, Boston													0	2			0	1																							8	0			36
37	Medical School of Harvard University									3	0	1	0	8	2					1	0	2	0					2	0	4	0	1	0					2	0	1	0	32	0			37
38	Tufts College Medical School																	1	0					1	0					1	0							2	0			50	6			38
	MICHIGAN																																													
39	Detroit College of Medicine and Surgery																							1	0	1	1																	48	2	39
40	University of Michigan Medical School					1	0							0	1			1	0							1	0	1	0	1	0											1	0	57	0	40
41	University of Michigan, Homeo. Med. School.—H.									2	0																																	8	0	41
	MINNESOTA																																													
42	University of Minnesota Medical School					1	0																																							42
	MISSOURI																																													
43	Kansas City College of Medicine and Surgery.—E.							12	0																																					43
44	National University of Arts and Sciences											0	1											1	0	1	2					1	0													44
45	Southwest School of Medicine and Hospital.—H.							7	0																							6	0													45
46	St. Louis University, School of Medicine	0	1			1	0			2	0															16	0	2	0			2	0													46
47	Washington University Medical School					1	0													1	0																									47
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

BY STATE BOARDS DURING 1916

Marginal Number	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	Minnesota		Mississippi		Missouri		Montana		Nebraska		Nevada		New Hampshire		New Jersey		New Mexico		New York		North Carolina		North Dakota		Ohio		Oklahoma		Oregon		Pennsylvania		Rhode Island		South Carolina		South Dakota		Tennessee		Texas		Utah		Vermont		Virginia		Washington		West Virginia		Wisconsin		Wyoming							
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1			1	1															1	2																																					26	21	5	19.2	6	1
2																																																							1	0	20	17	3	15.0	4	2
3											1	0																	2	0																											13	13	0	0.0	4	3
4																																															1	0							27	27	0	0.0	4	4
5																													1	1																											10	8	2	20.0	3	5
6											1	0																	0	1																											13	11	2	15.4	3	6
7											1	0							1	0									1	0																											25	25	0	0.0	4	7
8																			2	0																																					2	2	0	0.0	1	8
9																																																									35	35	0	0.0	3	9
10	1	0																							1	0																													2	0	18	18	0	0.0	6	10
11																			2	0					1	0							1	0																							12	11	1	8.3	6	11
12									1	0					2	0			3	0							1	0			2	0																	1	0							25	21	4	16.0	13	12
13							0	1											2	0							1	0					1	0																	1	0	1	0	1	0			33	29	4	12.1	14	13
14			0	1	1	0									5	2			1	1															1	0					1	0					1	0									29	19	10	34.5	15	14
15			3	2																	2	2					1	0					0	1	9	3	1	0			0	1									1	0					157	142	15	9.6	12	15
16					1	0																																																			9	6	3	33.3	2	16
17																					1	0													2	1											1	0			1	0					19	18	1	5.3	7	17
18	1	0	1	0	5	2	2	2	3	0									0	1			1	1	1	0	2	0	1	0	1	0					1	0					1	0					1	0	7	0	5	4	3	0	225	190	35	15.6	27	18
19																																																									10	4	6	60.0	2	19
20							1	0																					1	0	2	0					1	0																			29	26	3	10.3	9	20
21							1	0																																																	12	8	4	33.3	2	21
22			1	1	7	0	4	0	1	0							1	0			3	0					1	0							0	1	3												1	1	3	1					163	125	38	23.3	24	22
23	1	0			1	0	0	1											1	2			1	0			2	0									1	0																			1	0	67	62	5	7.5	15	23
24	8	0			2	0	1	1	1	0									0	2			4	0	2	0			1	0							3	0			2	0	4	0					4	2			1	0	1	0	145	137	8	5.5	24	24
25	1	0	1	0	5	0	5	1															0	1	1	0	1	0	1	0							2	0					1	0					2	0			7	0			143	139	4	2.8	21	25
26																																					1	0																			37	35	2	5.7	3	26
27																													2	1																											35	34	1	2.9	1	27
28																																																									1	1	0	0.0	1	28
29																																																									11	11	0	0.0	1	29
30			2	1	1	0	0	1											1	2	1	0			1	0	1	0	0	1	2	1									2	0							3	0	4	0	1	0	2	0	79	67	12	15.2	23	30
31			5	3	1	0													1	2	2	0	1	0			2	0											1	0	7	0									1	0					97	92	5	5.2	17	31
32																																																									13	12	1	7.7	3	32
33	2	0			2	0	2	0							5	0			12	3	3	0			1	0	1	0	1	1	3	0			3	0	1	0					1	0			1	0	2	0							103	96	7	6.8	29	33
34													1	0	1	0			6	4	9	0			3	0					6	0			8	0											4	0	1	0	10	0					125	104	21	16.8	17	34
35													2	0					2	1											1	0															1	0									25	23	2	8.0	8	35
36																					0	1																																			21	8	13	61.9	4	36
37	1	0			3	0			1	0	1	0	2	0	1	0			33	5	1	0	1	0	1	0					3	0	4	0	1	0													1	0			1	0			99	92	7	7.1	26	37
38													5	0					0	4											1	0	11	2					1	0					1	0											86	74	12	14.1	11	38
39																			2	1																																	1	0			57	53	4	7.0	5	39
40	1	0					2	0											1	2					1	0			1	1	2	0																	1	0			1	0	1	0	76	72	4	5.3	17	40
41																			1	0																																					11	11	0	0.0	3	41
42	33	0					3	0															1	0					2	0							1	0											1	0							42	42	0	0.0	7	42
43																																																									12	12	0	0.0	1	43
44					54	4															0	1																	2	0																	67	59	8	11.9	7	44
45																																																									13	13	0	0.0	2	45
46	1	0			36	0																					1	0													1	0							1	0							64	63	1	1.6	11	46
47					14	0	1	0																			1	0															1	0													19	19	0	0.0	6	47
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE A—PHYSICIANS EXAMINED BY

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Alaska		3 Arizona		4 Arkansas		5 California		6 Colorado		7 Connecticut		8 Delaware		9 Dist. Columbia		10 Florida		11 Georgia		12 Idaho		13 Illinois		14 Indiana		15 Iowa		16 Kansas		17 Kentucky		18 Louisiana		19 Maine		20 Maryland		21 Massachusetts		22 Michigan		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	NEBRASKA																																													
48	John A. Creighton Medical College	..	..	..	..	1	0	..	..	0	1	1	1	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	2	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	48
9	Lincoln Medical College.—E.	..	..	..	..	..	..	..	..	..	..	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	49
	University of Nebraska, College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	50
	NEW HAMPSHIRE																																													
	mouth Medical School	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	2	0	..	..	51
	NEW YORK																																													
52	Albany Medical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	2	1	..	..	52
53	C	..	..	4	0	..	..	1	0	..	..	..	..	5	2	..	..	..	..	1	0	1	0	1	0	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	2	1	..	..	53
54	edical College	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	54
55	, School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	55
56	Long Island College Hospital	..	..	..	..	..	..	..	..	..	..	..	..	1	1																											2	0	..	..	56
57	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.	..	..	..	..	..	..	..	..	..	..	..	..	1	0																											1	1	..	..	57
58	New York Med. Coll. and Hosp. for Women.—H.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	58
59	Syracuse University, College of									..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	59
60	University and Bellevue Hospita									..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	60
61	University of Buffalo Department of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	61
	NORTH CAROLINA																																													
62	North Carolina Medical College	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	62
	OHIO																																													
63	Eclectic Medical College.—E.	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	2	0	0	1	..	..	..	..	..	..	..	..	63
64	Ohio State University, College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	64
65	Ohio State University, Coll. of Homeo. Med.—H.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	65
66	University of Cincinnati, College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	66
67	Western Reserve University, School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	67
	OKLAHOMA																																													
68	University of Oklahoma, School of Medicine	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	68
	OREGON																																													
69	University of Oregon, Department of Medicine	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	69
	PENNSYLVANIA																																													
70	Hahnemann Medical College and Hospital.—H.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	70
71	Jefferson Medical College	1	1	..	..	..	..	..	..	3	0	1	0	2	2	..	..	1	0	2	0	..	..	2	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	2	0	2	0	71
72	Medico-Chirurgical College of Philadelphia	..	..	..	..	..	..	..	..	..	..	..	..	2	0	4	0	0	1	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	0	1	1	0	72
73	Temple University, Department of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	0	1	..	..	..	..	73
74	University of Pennsylvania, School of Medicine	..	..	..	..	..	..	..	..	2	0	2	0	..	..	3	0	..	..	2	0	..	..	..	..	2	1	..	..	2	0	..	..	2	0	..	..	..	..	..	..	2	0	..	..	74
75	University of Pittsburgh, School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	75
76	Woman's Medical College of Pennsylvania	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	3	0	..	..	76
	SOUTH CAROLINA																																													
77	Medical College of the State of South Carolina	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	77
	TENNESSEE																																													
78	Lincoln Memorial University, Medical Department	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	78
79	Meharry Medical College	3	6	..	..	..	..	2	4	..	..	..	..	..	..	..	..	0	4	6	4	7	4	..	..	4	8	..	..	..	..	..	..	7	2	2	1	..	..	..	..	..	..	..	..	79
80	University of Tennessee, College of Medicine	5	3	..	..	..	..	10	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	2	3	..	..	..	..	..	..	..	..	80
81	Univ. of West Tennessee, Coll. of Med. and Surg.	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	81
82	Vanderbilt University, Medical Department	6	3	..	..	..	..	2	0	1	0	1	0	..	..	..	..	..	..	4	1	5	0	..	..	1	0	1	1	2	0	..	..	6	0	5	0	..	..	..	..	..	..	2	1	82
	TEXAS																																													
83	Baylor University, College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	83
84	Fort Worth School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	84
85	University of Texas, Department of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	85
	VERMONT																																													
86	University of Vermont, College of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	2	1	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	3	1	..	..	86
	VIRGINIA																																													
87	*Medical College of Virginia*	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	4	1	..	..	1	0	87
88	University of Virginia, Department of Medicine	..	..	..	..	1	0	..	..	1	0	..	..	1	0	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	88
	WISCONSIN																																													
89	Marquette University, School of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	1	0	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	89
	CANADA																																													
90	Dalhousie University, Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	90
91	Laval University, Faculty of Medicine	..	..	..	..	..	..	..	..	0	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	0	1	..	..	91
92	McGill University, Faculty of Medicine	..	..	..	..	1	0	..	..	3	0	..	..	1	0	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	0	..	..	92
93	Montreal School of Medicine and Surgery	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	93
91	Queen's University, Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	94
95	University of Toronto, Faculty of Medicine	..	..	..	..	..	..	..	..	1	0	..	..	1	0	..	..	..	..	..	..	..	..	..	..	2	0	2	0	..	..	..	..	..	..	..	..	1	0	1	0	..	..	2	0	95
96	Western University, Faculty of Medicine	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	0	..	..	..	..	..	..	..	..	..	..	..	..	1	0	96
97	Foreign Colleges	..	..	1	0	5	2	..	..	3	2	..	..	1	0	0	1	3	0	3	0	..	..	..	..	1	5	1	0	1	0	..	..	..	..	..	..	..	..	2	0	3	1	1	0	97
98	Miscellaneous Medical Colleges	5	14	1	0	4	3	6	2	3	2	0	1	4	4	..	..	1	2	9	9	1	1	8	0	2	7	1	1	5	1	..	0	3	5	1	4	2	1	5	9	11	8	0	1	98
	Totals by States	91		12		42		78		154		33		61		15		47		86		140		29		608		53		84		33		76		78		27		126		206		140		
	Totals—Examined—Passed	55		11		33		67		146		25		41		13		33		68		133		29		517		49		82		32		66		68		25		96		166		137		
	Totals—Examined—Failed	36		1		9		11		8		8		20		2		14		18		7		0		91		4		2		1		10		10		2		30		40		3		
	Percentage of Failures	39.6		8.3		21.4		14.1		5.2		24.2		32.8		13.3		29.8		20.9		5.0		0.0		15.0		7.5		2.4		3.0		13.2		12.8		7.4		23.8		19.4		3 6		
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

Marginal Number	23 Minnesota		24 Mississippi		25 Missouri		26 Montana		27 Nebraska		28 Nevada		29 New Hampshire		30 New Jersey		31 New Mexico		32 New York		33 North Carolina		34 North Dakota		35 Ohio		36 Oklahoma		37 Oregon		38 Pennsylvania		39 Rhode Island		40 South Carolina		41 South Dakota		42 Tennessee		43 Texas		44 Utah		45 Vermont		46 Virginia		47 Washington		48 West Virginia		49 Wisconsin		50 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
48					1	0	1	0	40	0																											0	1											1	0					1	0	53	50	3	5.7	12	48
49									3	0																																															8	5	3	37.5	2	49
50									2	0																																													1	0	3	3	0	0.0	2	50
51							1	0																																																	6	6	0	0.0	4	51
52															4	0			51	14					1	0			1	1															1	0											77	61	16	20.8	7	52
53	1	0					1	0			1	0			4	0			53	10											3	0	1	10					1	0							1	0									95	82	13	13.7	17	53
54											2	0							25	0																																					27	27	0	0.0	2	54
55															2	0			33	14											2	0																									52	38	14	26.9	4	55
56															1	0			86	3											1	0																									95	91	4	4.2	5	56
57					1	0									8	1			44	28											1	1															1	0											94	62	32	34.0	11	57
58																			8	7																																					15	8	7	46.7	1	58
59																			24	0																							1	0											1	0			27	27	0	0.0	4	59
60											1	0			4	1			51	4	3	0									1	0																									68	63	5	17.3	7	60
61																			37	6																																					45	39	6	13.3	2	61
62																					14	2													1	2											0	1			0	1					22	15	7	31.8	5	62
63																			2	0			1	1	19	2					0	1																			1	0					33	28	5	15.2	9	63
64					1	0	1	1																	61	0																									2	0					67	66	1	1.5	5	64
65																									7	0																															7	7	0	0.0	1	65
66																			2	0					21	0	1	0																							1	0					28	28	0	0.0	7	66
67					1	0																			51	0			1	0	1	0											3	0							2	0					59	59	0	0.0	6	67
68																											12	1	0	1					0	2					1	0	2	0													20	16	4	20.0	6	68
69																			1	0									12	2																			6	0							23	21	2	8.7	5	69
70															2	0											1	0			14	0															1	0									21	21	0	0.0	6	70
71			1	0	1	0	1	0							12	0			17	6	16	0			3	0			2	0	70	4	4	0	2	0	1	0	1	0							1	0	5	0	6	0	1	0			174	161	13	7.5	27	71
72															10	0			2	3	1	0									46	10	1	1	1	0			1	0			1	0									2	0			90	74	16	17.8	16	72
73																													1	0	16	3																									24	19	5	20.8	5	73
74	1	0	2	0											2	0			5	2	10	0			1	0	1	0			25	0			1	0													1	0	1	0	2	0			72	69	3	4.2	20	74
75															1	0									1	0	1	0			11	0																	1	0							15	15	0	0.0	5	75
76	1	0													2	0			3	4					2	0					7	1	1	0																							27	22	5	18.5	10	76
77																					3	1													15	4																					24	19	5	20.8	3	77
78			0	1																	1	0																	10	0																	15	14	1	6.7	5	78
79			0	7	5	2															4	3			0	1	2	1					0	1	1	4			28	11	8	3					0	1			1	0	1	0			148	81	67	45.3	20	79
80			22	7	1	0																					7	1							0	1			16	0	3	0															83	67	16	19.3	10	80
81					2	3															0	2					0	1							1	0			5	9	1	1					0	1									28	10	18	64.3	9	81
82			4	0															2	0							2	0											54	0	6	0					1	0									111	105	6	5.4	18	82
83																			1	0							2	0													19	5															29	24	5	17.2	4	83
84																											2	0													4	1															7	6	1	14.3	2	84
85					1	0													1	0											1	0									30	0															37	37	0	0.0	7	85
86															2	0			7	2													2	1											13	0			1	0							39	34	5	12.8	9	86
87															1	0			3	2	18	3			1	0					0	1			4	1											70	3			10	0					124	113	11	8.9	11	87
88			2	0											1	0			1	0	3	0					1	0	1	0																	12	0									25	25	0	0.0	11	88
89							1	0									1	0					2	0	0	1																											45	0			53	52	1	1.9	8	89
90																																																									1	1	0	0.0	1	90
91	1	0					0	1																																																	5	2	3	60.0	5	91
92											1	0							1	2											0	1															1	0	2	0							16	13	3	18.7	10	92
93																																													1	0											2	2	0	0.0	2	93
94																			0	1																			1	0																	3	2	1	33.3	3	94
95	1	0																	2	1																																					17	16	1	5.9	12	95
96							0	1																																									[illegible]	[illegible]							4	3	1	25.0	4	96
97											1	0			1	4			4	11					1	1			2	1	1	3									3	1							5	0							78	43	35	44.9	21	97
98	1	1	3	5	14	2	10	4			0	1			1	2	3	1	5	7	1	3	3	2			5	4	4	6	10	7	1	1	3	5	2	1	7	0	1	1	1	0			4	2	3	1	6	0	1	0	3	0	294	164	130	44.2	44	98
	57		77		174		52		52		11		10		82		6		682		114		20		187		60		55		266		34		77		20		148		103		15		17		107		52		60		76		17		4850					
	56		48		161		38		52		10		10		72		5		523		96		15		182		52		38		233		27		53		18		128		90		15		17		99		48		58		72		17		....	4123				
	1		29		13		14		0		1		0		10		1		159		18		5		5		8		17		33		7		24		2		20		13		0		0		8		4		2		4		0		....	....	727			
	1.8		37.7		7.5		26.9		0.0		9.1		0.0		12.2		16.7		23.3		15.8		25.0		2.7		13.3		30.9		12.4		20.6		31.2		10.0		13.5		12.6		0.0		0.0		7.5		7.7		3.3		5.3		0.0		....	....	....	15.0		
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE B—GRADUATES OF 1912 TO 1916, INCLUSIVE,

Marginal Number	NAME OF COLLEGE	1 Alabama		2 Alaska		3 Arizona		4 Arkansas		5 California		6 Colorado		7 Connecticut		8 Delaware		9 Dist. Columbia		10 Florida		11 Georgia		12 Idaho		13 Illinois		14 Indiana		15 Iowa		16 Kansas		17 Kentucky		18 Louisiana		19 Maine		20 Maryland		21 Massachusetts		22 Michigan		Marginal Number
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	ALABAMA																																													
1	University of Alabama, School of Medicine	16	1																																											1
	ARKANSAS																																													
2	University of Arkansas, Medical Department							16	1																																					2
	CALIFORNIA																																													
3	lege of Medical Evangelists									9	0																			1	0															3
4	ollege of Physicians and Surgeons, Los Angeles					2	0			23	0																																			4
5	College of Physicians and Surgs. of San Francisco					1	0			5	1																																			5
6	Hahnemann Medical College of the Pacific.—H.									10	1																																			6
7	Leland Stanford Junior Univ., School of Medicine									22	0																																			7
8	Oakland College of Medicine and Surgery									2	0																																			8
9	University of California Medical School					2	0			30	0																																			9
	COLORADO																																													
10	University of Colorado, School of Medicine									1	0	11	0																																	10
	CONNECTICUT																																													
11	Yale University, School of Medicine													5	1																													1	0	11
	DISTRICT OF COLUMBIA																																													
12	Georgetown University, School of Medicine											1	0	1	0			4	0											1	0											2	1	1	0	12
13	George Washington University Medical School									1	0			1	0			14	1																					1	0	1	0	1	0	13
14	Howard University, School of Medicine	0	1							1	0							1	2							2	1					2	0			1	0			1	0					14
	GEORGIA																																													
15	Atlanta Medical College	7	3																	17	2	97	0							1	0															15
16	Georgia College of Eclectic Med. and Surg.—E.							5	3																																					16
17	University of Georgia, Medical Department	1	0																	1	0	11	0																							17
	ILLINOIS																																													
18	Chicago College of Medicine and Surgery	0	1			1	0					1	0											1	0	138	20	3	0	5	0			1	0					0	1	3	1			18
19	Chicago Hospital College of Medicine																	1	0							3	6																			19
20	Hahnemann Medical College and Hospital.—H.									2	0															16	3			1	0	1	0													20
21	Jenner Medical College																									7	4																			21
22	Loyola University, School of Medicine	0	1			1	0	1	0	1	0			0	1					2	0	1	1			89	26							2	2	1	0			1	1	1	1			22
23	Northwestern University Medical School					1	0					1	0											1	0	39	2			3	0	1	0											2	0	23
24	Rush Medical College					2	0			5	0	2	0													77	1	1	0	7	0	1	0											2	0	24
25	University of Illinois, College of Medicine					1	0			1	0													2	0	96	1			5	0	1	0											2	0	25
	INDIANA																																													
26	Indiana University, School of Medicine																									1	0	33	2																	26
	IOWA																																													
27	State University of Iowa, College of Medicine																									1	0			27	0															27
28	State Univ. of Iowa, Coll. of Homeo. Med.—H.																																													28
	KANSAS																																													
29	University of Kansas, School of Medicine																															11	0													29
	KENTUCKY																																													
30	University of Louisville, Medical Department	1	0			0	1									1	0									2	1							38	2											30
	LOUISIANA																																													
31	Tulane University of Louisiana, School of Med.	7	0																	5	0									1	0	2	0			50	0									31
	MAINE																																													
32	Bowdoin Medical School													1	0																							10	1			1	0			32
	MARYLAND																																													
33	Johns Hopkins University, Medical Department									1	0					1	0					1	0			2	0			1	0			1	0	1	0			37	2	4	0	1	0	33
34	Univ. of Maryland, Sch. of Med. & Coll. of P. & S.													1	1			2	1	1	0	2	0															1	0	11	14	7	1			34
	MASSACHUSETTS																																													
35	Boston University, School of Medicine.—H.									1	0																											1	0			13	1			35
36	College of Physicians and Surgeons, Boston													0	1			0	1																							7	8			36
37	Medical School of Harvard University									3	0	1	0	7	2					1	0	2	0					2	0	3	0	1	0					2	0	1	0	32	0			37
38	Tufts College Medical School																													1	0							2	0			50	6			38
	MICHIGAN																																													
39	Detroit College of Medicine and Surgery																							1	0																			48	2	39
40	University of Michigan Medical School					1	0																					1	0															57	0	40
41	University of Michigan, Homeo. Med. School.—H.									2	0																																	8	0	41
	MINNESOTA																																													
42	University of Minnesota Medical School					1	0																																							42
	MISSOURI																																													
43	Kansas City College of Medicine and Surgery.—E.							12	0																																					43
44	National University of Arts and Sciences											0	1											1	0	1	2					1	0													44
45	Southwest School of Medicine and Hospital.—H.							7	0																							6	0													45
46	St. Louis University, School of Medicine	0	1							1	0															16	0	2	0			2	0													46
47	Washington University Medical School					1	0																																							47
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

Marginal Number	23 Minnesota		24 Mississippi		25 Missouri		26 Montana		27 Nebraska		28 Nevada		29 New Hampshire		30 New Jersey		31 New Mexico		32 New York		33 North Carolina		34 North Dakota		35 Ohio		36 Oklahoma		37 Oregon		38 Pennsylvania		39 Rhode Island		40 South Carolina		41 South Dakota		42 Tennessee		43 Texas		44 Utah		45 Vermont		46 Virginia		47 Washington		48 West Virginia		49 Wisconsin		50 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
1																			0	1																																					18	16	2	11.1	2	1
2																																																									17	16	1	5.9	1	2
3											1	0																			2	0																									13	13	0	0.0	4	3
4																																																	1	0							26	26	0	0.0	3	4
5																															1	1																									9	7	2	22.2	3	5
6											1	0																			0	1																									13	11	2	15.4	3	6
7											1	0							1	0											1	0																									25	25	0	0.0	4	7
8																																																									2	2	0	0.0	1	8
9																			1	0																																					33	33	0	0.0	3	9
10	1	0																							1	0																													1	0	15	15	0	0.0	5	10
11																			2	0					1	0							1	0																							11	10	1	9.1	5	11
12									1	0					2	0			3	0													2	0																	1	0							20	19	1	5.0	11	12
13							0	1											1	0																															1	0			1	0			24	22	2	8.3	10	13
14			0	1	1	0									5	1			0	1																	1	0					1	0					1	0									24	17	7	29.2	14	14
15			2	2																	1	2					1	0					0	1	8	3					0	1									1	0					149	135	14	9.4	11	15
16					1	0																																																			9	6	3	33.3	2	16
17																					1	0													2	1											1	0			1	0					19	18	1	5.3	7	17
18	1	0	1	0	5	2	2	2	3	0									0	1			1	1	1	0	2	0	1	0	1	0					1	0					1	0					1	0	7	0	5	3	2	0	220	188	32	14.5	27	18
19																																																									10	4	6	60.0	2	19
20																													1	0	1	0																									25	22	3	12.0	6	20
21							1	0																																																	12	8	4	33.3	2	21
22			1	1	7	0	2	0	1	0											3	0					1	0							0	1	2	0											1	0	3	1					157	121	36	22.9	22	22
23	1	0			1	0													0	1			1	0			2	0									1	0																			57	54	3	5.3	13	23
24	7	0			2	0	1	0	1	0									0	1			4	0													3	0			1	0	1	0									1	0			123	121	2	1.6	18	24
25	1	0	1	0	4	0	1	0															0	1	1	0	1	0									1	0					1	0					2	0			7	0			130	128	2	1.5	18	25
26																																																									36	34	2	5.6	2	26
27																																																									28	28	0	0.0	2	27
28																																																														28
29																																																									11	11	0	0.0	1	29
30			2	1															1	2	1	0			1	0	1	0			1	1									1	0							2	0	4	0	1	0	2	0	67	59	8	11.9	16	30
31			4	3	1	0													1	1	2	0	1	0			2	0													6	0															86	82	4	4.7	12	31
32																																																									13	12	1	7.7	3	32
33	2	0			2	0	1	0							4	0			7	1	3	0			1	0	1	0	1	1	3	0			3	0	1	0					1	0			1	0	2	0							87	83	4	4.6	25	33
34													1	0	1	0			5	4	9	0			3	0					6	0			7	0											4	0	1	0	10	0					123	102	21	17.1	17	34
35													2	0					2	1											1	0															1	0									23	21	2	8.7	7	35
36																																																									17	7	10	58.8	3	36
37	1	0			3	0			1	0			1	0	1	0			13	2	1	0	1	0	1	0					3	0	4	0	1	0													1	0			1	0			92	88	4	4.3	25	37
38													5	0					0	2											1	0	9	2					1	0					1	0											80	70	10	12.5	9	38
39																			1	0																																					52	50	2	3.8	3	39
40							1	0											1	1					1	0			0	1	1	0																	1	0			1	0			65	63	2	3.1	10	40
41																			1	0																																					11	11	0	0.0	3	41
42	33	0					1	0															1	0					1	0							1	0																			38	38	0	0.0	6	42
43																																																									12	12	0	0.0	1	43
44					54	4															0	1																	2	0																	67	59	8	11.9	7	44
45																																																									13	13	0	0.0	2	45
46	1	0			37	0																					1	0													1	0															61	60	1	1.6	9	46
47					14	0	1	0																			1	0															1	0													18	18	0	0.0	5	47
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

TABLE B—GRADUATES OF 1912 TO 1916, INCLUSIVE,

Marginal Number	NAME OF COLLEGE	1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		Marginal Number
		Alabama		Alaska		Arizona		Arkansas		California		Colorado		Connecticut		Delaware		Dist. Columbia		Florida		Georgia		Idaho		Illinois		Indiana		Iowa		Kansas		Kentucky		Louisiana		Maine		Maryland		Massachusetts		Michigan		
		P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	
	NEBRASKA																																													
48	John A. Creighton Medical College					1	0			0	1	1	0																	2	0	1	0													48
49	Lincoln Medical College.—E.											0	1																																	49
50	University of Nebraska, College of Medicine																																													50
	NEW HAMPSHIRE																																													
	Dartmouth Medical School																																									1	0			51
	NEW YORK																																													
52	Albany Medical College																																									2	1			52
53	Columbia University			1	0			1	0					3	2							1	0									1	0									2	0			53
54	Cornell University Medical College																																													54
55	Fordham University, School of Medicine													1	0																															55
56	Long Island College Hospital													1	1																											1	0			56
57	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.													1	0	2	1					1	0			1	0											1	0			1	1			57
58	New York Med. Coll. and Hosp. for Women.—H.																																													58
59	Syracuse University, College of Medicine																																													59
60	University and Bellevue Hospital Medical College																			1	0																					1	0			60
61	University of Buffalo Department of Medicine																																											2	0	61
	NORTH CAROLINA																																													
62	North Carolina Medical College																																													62
	OHIO																																													
63	Eclectic Medical College.—E.									2	0															1	0							2	0											63
64	Ohio State University, College of Medicine																									1	0																			64
65	Ohio State University, Coll. of Homeo. Med.—H.																																													65
66	University of Cincinnati, College of Medicine																																	1	0									1	0	66
67	Western Reserve University, School of Medicine																																													67
	OKLAHOMA																																													
68	University of Oklahoma, School of Medicine	1	0																																											68
	OREGON																																													
69	University of Oregon, Department of Medicine									1	0																																			69
	PENNSYLVANIA																																													
70	Hahnemann Medical College and Hospital.—H.															2	0																			1	0									70
71	Jefferson Medical College	1	1							3	0	1	0	2	2			1	0	2	0			2	0					1	0											2	0	2	0	71
72	Medico-Chirurgical College of Philadelphia													2	0	4	0	0	1																					1	0	0	1	1	0	72
73	Temple University, Department of Medicine													1	0			1	1																					0	1					73
74	University of Pennsylvania, School of Medicine									2	0	2	0			3	0			1	0									1	0			2	0							1	0			74
75	University of Pittsburgh, School of Medicine																																													75
76	Woman's Medical College of Pennsylvania																													1	0									1	0	2	0			76
	SOUTH CAROLINA																																													
77	Medical College of the State of South Carolina																			1	0																									77
	TENNESSEE																																													
78	Lincoln Memorial University, Medical Department							2	0																									1	0											78
79	Meharry Medical College	3	5					2	4									0	4	6	4	7	3			3	7							6	2	2	1									79
80	University of Tennessee, College of Medicine	5	3					10	1																											2	3									80
81	Univ. of West Tennessee, Coll. of Med. and Surg.																					1	0									0	1													81
82	Vanderbilt University, Medical Department	6	3					2	0	1	0	1	0							4	0	5	0			1	0	1	1	2	0			5	0	3	0							2	1	82
	TEXAS																																													
83	Baylor University, College of Medicine																																			1	0									83
84	Fort Worth School of Medicine																																													84
85	University of Texas, Department of Medicine																			2	0											1	0									1	0			85
	VERMONT																																													
86	University of Vermont, College of Medicine													2	0									1	0			1	0													4	1			86
	VIRGINIA																																													
87	Medical College of Virginia																																							4	1			1	0	87
88	University of Virginia, Department of Medicine					1	0																																							88
	WISCONSIN																																													
89	Marquette University, School of Medicine																							1	0	1	0	1	0																	89
	CANADA																																													
90	Dalhousie University, Faculty of Medicine																																									1	0			90
91	Laval University, Faculty of Medicine																																					1	0							91
92	McGill University, Faculty of Medicine									3	0			1	0																											1	0			92
93	Montreal School of Medicine and Surgery																																									1	0			93
94	Queen's University, Faculty of Medicine																																									1	0			94
95	University of Toronto, Faculty of Medicine																																					1	0					2	0	95
96	Western University, Faculty of Medicine																													1	0													1	0	96
97	Foreign Colleges					0	1									0	1	1	0	2	0					0	1	1	0											2	0	0	2			97
98	Miscellaneous Medical Colleges	5	12			0	1	0	1	3	1	0	1	3	4			0	1	1	2	1	0											2	1					4	6	7	6			98
	Totals by States	85		1		19		68		140		25		48		15		37		55		134		10		573		49		65		33		68		68		20		120		181		136		
	Totals—Examined—Passed	53		1		16		58		136		22		33		13		25		47		130		10		498		46		65		32		61		64		19		94		150		133		
	Totals—Examined—Failed	32		0		3		10		4		3		15		2		12		8		4		0		75		3		0		1		7		4		1		26		31		3		
	Percentage of Failures	37.6		0.0		15.8		14.7		2.9		12.0		31.2		13.3		32.4		14.5		3.0		0.0		13.1		6.1		0.0		3.0		10.3		5.9		5.0		21.7		17.1		2.2		
		1		2		3		4		5		6		7		8		9		10		11		12		13		14		15		16		17		18		19		20		21		22		

H. = Homeopathic; E. = Eclectic; P. = Passed; F. = Failed.

EXAMINED BY STATE BOARDS DURING *1916—Continued*

Marginal Number	23 Minnesota		24 Mississippi		25 Missouri		26 Montana		27 Nebraska		28 Nevada		29 New Hampshire		30 New Jersey		31 New Mexico		32 New York		33 North Carolina		34 North Dakota		35 Ohio		36 Oklahoma		37 Oregon		38 Pennsylvania		39 Rhode Island		40 South Carolina		41 South Dakota		42 Tennessee		43 Texas		44 Utah		45 Vermont		46 Virginia		47 Washington		48 West Virginia		49 Wisconsin		50 Wyoming		Totals	Examined—Passed	Examined—Failed	Percentage of Failures	No. States Exam. in	Marginal Number
	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F	P	F						
48					1	0	1	0	40	0																													0	1											1	0					1	0	51	49	2	3.9	11	48
49									2	0																																																	3	2	1	33.3	2	49
50									2	0																																															1	0	3	3	0	0.0	2	50
51																																																									1	1	0	0.0	1	51
52															4	0			50	12					1	0			1	1																	1	0											73	59	14	19.2	6	52
53	1	0													4	0			52	10											3	0							1	0							1	0									83	71	12	14.5	12	53
54																			25	0																																					25	25	0	0.0	1	54
55															2	0			33	14											2	0																									52	38	14	26.9	4	55
56															1	0			85	3											1	0																									93	89	4	4.3	5	56
57															8	1			44	28											1	1																									92	60	32	34.8	0	57
58																			8	7																																					15	8	7	46.7	1	58
59																			24	0																																	1	0			25	25	0	0.0	2	59
60															4	0			50	4	3	0																																			63	59	4	6.3	5	60
61																			37	5																																					44	39	5	11.4	2	61
62																					14	2													1	1											0	1			0	1					20	15	5	25.0	4	62
63																			2	0					18	2					0	1																			1	0					29	26	3	10.3	7	63
64					1	0	1	1																	61	0																									2	0					67	66	1	1.5	5	64
65																									7	0																															7	7	0	0.0	1	65
66																									21	0																									1	0					24	24	0	0.0	4	66
67					1	0																			51	0					1	0											3	0							2	0					58	58	0	0.0	5	67
68																											12	1							0	2					1	0	2	0													19	16	3	15.8	5	68
69																			1	0									10	2																			5	0							19	17	2	10.5	4	69
70															2	0											1	0			14	0															1	0									21	21	0	0.0	6	70
71			1	0	1	0	1	0							11	0			17	4	16	0			3	0			1	0	68	4	4	0	2	0	1	0	1	0							1	0	5	0	5	0	1	0			167	156	11	6.6	27	71
72															10	0			2	3	1	0									46	10	1	1	1	0			1	0			1	0													89	73	16	18.0	15	72
73																																3																									23	18	5	21.8	4	73
74	1	0	2	0											2	0																0			1	0													1	0	1	0	1	0			62	61	1	1.6	18	74
75															1	0																0																									14	14	0	0.0	4	75
76															2	0			3	4					2	0					7	0																									22	18	4	18.2	7	76
77																					3	0													15	0																					19	19	0	0.0	3	77
78			0	1																	1	0																	10	0																	15	14	1	6.7	5	78
79			0	7	5	2															4	3					2	1					0	1	1	2			28	11	8	3					0	1			1	0					139	78	61	43.9	18	79
80			22	7	1	0																					7	1											16	0	3	0															81	66	15	18.5	8	80
81					2	3															0	2					0	1							1	0			5	8	1	1					0	1									27	10	17	63.0	9	81
82			4	0															2	0							2	0											54	0	6	0					1	0									109	104	5	4.6	18	82
83																											2	0													19	5															27	22	5	18.5	3	83
84																											2	0													4	1															7	6	1	14.3	2	84
85					1	0													1	0											1	0									30	0															37	37	0	0.0	7	85
86															2	0			7	2													1	0											13	0											34	31	3	8.8	8	86
87															1	0			2	2	18	3			1	0					0	1			4	1											70	3			10	0					122	111	11	9.0	10	87
88			2	0											1	0			1	0	3	0					1	0																			11	0									20	20	0	0.0	7	88
89							1	0									1	0					2	0	0	1																											45	0			53	52	1	1.9	8	89
90																																																									1	1	0	0.0	1	90
91	1	0					0	1																																																	3	2	1	33.3	3	91
92																			1																														2	0							10	9	1	10.0	7	92
93																																																									2	2	0	0.0	2	93
94																			0	1																									1	0											2	1	1	50.0	2	94
95																			2	1																																					8	7	1	12.5	5	95
96							0	1																																									1	0							4	3	1	25.0	4	96
97																			1	4					0	1			0	1	0	1																									19	7	12	63.2	12	97
98			1	2	1	1	0	2							1	0	1	1	5	3	1	2	1	1			2	1	1	1	5	6	1	0	2	2			0	0	0	1							2	0	6	0	1	0			119	60	59	49.6	31	98
	51		68		157		23		51		3		9		71		3		626		110		15		182		50		30		250		26		63		12		141		94		14		16		100		32		57		71		8		4283					
	51		43		145		15		51		3		9		69		2		499		95		12		178		45		21		221		21		50		11		122		82		14		16		94		32		55		68		8		....	3738				
	0		25		12		8		0		0		0		2		1		127		15		3		4		5		9		29		5		13		1		19		12		0		0		6		0		2		3		0		....	....	545			
	0.0		36.8		7.6		34.8		0.0		0.0		0.0		2.8		33.3		20.3		13.6		20.0		2.2		10.0		30.0		11.6		19.2		20.6		8.3		13.5		12.8		0.0		0.0		6.5		0.0		3.5		4.2		0.0		....	....	....	12.7		
	23		24		25		26		27		28		29		30		31		32		33		34		35		36		37		38		39		40		41		42		43		44		45		46		47		48		49		50							

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1912-1916					Graduates of 1911 and Previous					Graduates of 1916					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	ALABAMA																					
	University of Alabama, School of Medicine	26	21	5	19.2	6	18	16	2	11.1	2	8	5	3	37.5	6	15	14	1	6.7	1	1
	ARKANSAS																					
	niversity of Arkansas, Medical Department	20	17	3	15.0	4	17	16	1	5.9	1	3	1	2	66.7	2	16	15	1	6.3	1	2
	CALIFORNIA																					
3	College of Medical Evangelists	13	13	0	0.0	4	13	13	0	0.0	4	...	...	...	....	..	9	9	0	0.0	1	3
4	College of Physicians and Surgeons, Los Angeles	27	27	0	0.0	4	26	26	0	0.0	3	1	1	0	0.0	1	20	20	0	0.0	2	4
5	College of Physicians and Surgs. of San Francisco	10	8	2	20.0	3	9	7	2	22.2	3	1	1	0	0.0	1	5	4	1	20.0	3	5
6	Hahnemann Medical College of the Pacific.—H.	13	11	2	15.4	3	13	11	2	15.4	3	...	...	...	....	..	12	11	1	8.3	3	6
7	Leland Stanford Junior Univ., School of Medicine	25	25	0	0.0	4	25	25	0	0.0	4	...	...	...	....	..	20	20	0	0.0	1	7
8	Oakland College of Medicine and Surgery	2	2	0	0.0	1	2	2	0	0.0	1	...	...	...	....	..	2	2	0	0.0	1	8
9	University of California Medical School	35	35	0	0.0	3	33	33	0	0.0	3	2	2	0	0.0	2	30	30	0	0.0	2	9
	COLORADO																					
10	University of Colorado, School of Medicine	18	18	0	0.0	6	15	15	0	0.0	5	3	3	0	0.0	3	12	12	0	0.0	2	10
	CONNECTICUT																					
11	Yale University, School of Medicine	12	11	1	8.3	6	11	10	1	9.1	5	1	1	0	0.0	1	6	6	0	0.0	3	11
	DISTRICT OF COLUMBIA																					
12	Georgetown University, School of Medicine	25	21	4	16.0	13	20	19	1	5.0	11	5	2	3	60.0	5	2	2	0	0.0	2	12
13	George Washington University Medical School	33	29	4	12.1	14	24	22	2	8.3	10	9	7	2	22.2	7	18	16	2	11.1	5	13
14	Howard University, School of Medicine	29	19	10	34.5	15	24	17	7	29.2	14	5	2	3	60.0	5	5	4	1	20.0	5	14
	GEORGIA																					
15	Atlanta Medical College	157	142	15	9.6	12	149	135	14	9.4	11	8	7	1	12.5	6	129	123	6	4.7	7	15
16	Georgia College of Eclectic Med. and Surg.—E.	9	6	3	33.3	2	9	6	3	33.3	2	...	...	...	....	..	8	5	3	37.5	1	16
17	University of Georgia, Medical Department	19	18	1	5.3	7	19	18	1	5.3	7	...	...	...	....	..	15	15	0	0.0	5	17
	ILLINOIS																					
18	Chicago College of Medicine and Surgery	225	190	35	15.5	27	220	188	32	14.5	27	5	2	3	60.0	5	160	141	19	11.9	16	18
19	Chicago Hospital College of Medicine	10	4	6	60.0	2	10	4	6	60.0	2	...	...	...	....	..	3	2	1	33.3	1	19
20	Hahnemann Medical College and Hospital.—H.	29	26	3	10.3	9	25	22	3	12.0	6	4	4	0	0.0	4	18	17	1	5.6	4	20
21	Jenner Medical College	12	8	4	33.3	2	12	8	4	33.3	2	...	...	...	....	..	6	4	2	33.3	1	21
22	Loyola University, School of Medicine	163	125	38	23.3	24	157	121	36	22.9	22	6	4	2	33.3	5	107	84	23	21.5	14	22
23	Northwestern University Medical School	67	62	5	7.5	15	57	54	3	5.3	13	10	8	2	20.0	7	43	41	2	4.7	7	23
24	Rush Medical College	145	137	8	5.5	24	123	121	2	1.6	18	22	16	6	27.3	13	86	84	2	2.3	13	24
25	University of Illinois, College of Medicine	143	139	4	2.8	21	130	128	2	1.5	18	13	11	2	15.4	6	111	110	1	0.9	9	25
	INDIANA																					
26	Indiana University, School of Medicine	37	35	2	5.4	3	36	34	2	5.6	2	1	1	0	0.0	1	35	33	2	5.7	2	26
	IOWA																					
27	State Universtiy of Iowa, College of Medicine	35	34	1	2.9	4	28	28	0	0.0	2	7	6	1	14.3	4	28	28	0	0.0	2	27
28	State Univ. of Iowa, Coll. of Homeo. Med.—H.	1	1	0	0.0	1	....	....	....	....	..	1	1	0	0.0	1	....	....	...	....	..	28
	KANSAS																					
29	University of Kansas, School of Medicine	11	11	0	0.0	1	11	11	0	0.0	1	...	...	...	....	..	11	11	0	0.0	1	29
	KENTUCKY																					
30	University of Louisville, Medical Department	79	67	12	15.2	23	67	59	8	11.9	16	12	8	4	33.3	12	53	50	3	5.7	10	30
	LOUISIANA																					
31	Tulane University of Louisiana, School of Med.	97	92	5	5.2	17	86	82	4	4.7	12	11	10	1	9.1	10	78	76	2	2.6	10	31
	MAINE																					
32	Bowdoin Medical School	13	12	1	7.7	3	13	12	1	7.7	3	...	...	...	....	..	10	9	1	10.0	1	32
	MARYLAND																					
33	Johns Hopkins University, Medical Department	103	96	7	6.8	29	87	83	4	4.6	25	16	13	3	18.7	9	47	45	2	4.3	10	33
34	Univ. of Maryland, Sch. of Med. & Coll. of P. & S.	125	104	21	16.8	17	123	102	21	17.1	17	2	2	0	0.0	2	83	67	16	19.3	12	34
	MASSACHUSETTS																					
35	Boston University, School of Medicine.—H.	25	23	2	8.0	8	23	21	2	8.7	7	2	2	0	0.0	2	12	12	0	0.0	3	35
36	College of Physicians and Surgeons, Boston	21	8	13	61.9	4	17	7	10	58.8	3	4	1	3	75.0	3	13	6	7	53.8	2	36
37	Medical School of Harvard University	99	92	7	7.1	26	92	88	4	4.3	25	7	4	3	42.9	5	47	45	2	4.3	15	37
38	Tufts College Medical School	86	74	12	13.9	11	80	70	10	12.5	9	6	4	2	33.3	4	56	53	3	5.1	5	38
	MICHIGAN																					
39	Detroit College of Medicine and Surgery	57	53	4	7.0	5	52	50	2	3.8	3	5	3	2	40.0	3	50	48	2	4.0	1	39
40	University of Michigan Medical School	76	72	4	5.3	17	65	63	2	3.1	10	11	9	2	18.2	11	62	61	1	1.6	8	40
41	University of Michigan, Homeo. Med. School.—H.	11	11	0	0.0	3	11	11	0	0.0	3	...	...	...	....	..	7	7	0	0.0	1	41
	MINNESOTA																					
42	University of Minnesota Medical School	42	42	0	0.0	7	38	38	0	0.0	6	4	4	0	0.0	3	34	34	0	0.0	2	42
	MISSOURI																					
43	Kansas City College of Medicine and Surgery.—E.	12	12	0	0.0	1	12	12	0	0.0	1	...	...	...	....	..	12	12	0	0.0	1	43
44	National University of Arts and Sciences	67	59	8	11.9	7	67	59	8	11.9	7	...	...	...	....	..	61	55	6	9.8	5	44
45	Southwest School of Medicine and Hospital.—H.	13	13	0	0.0	2	13	13	0	0.0	2	...	...	...	....	..	13	13	0	0.0	2	45
46	St. Louis University, School of Medicine	64	63	1	1.6	11	61	60	1	1.6	9	3	3	0	0.0	3	50	50	0	0.0	6	46
47	Washington University Medical School	19	19	0	0.0	6	18	18	0	0.0	5	1	1	0	0.0	1	16	16	0	0.0	4	47

H. = Homeopathic; E. = Eclectic.

Marginal Number	NAME OF COLLEGE	Graduates of All Years					Graduates of 1912-1916					Graduates of 1911 and Previous					Graduates of 1916					Marginal Number
		Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	Number Examined	Number Passed	Number Failed	Per Cent. Failed	Number of States	
	NEBRASKA																					
48	John A. Creighton Medical College	53	50	3	5.7	12	51	49	2	3.9	11	2	1	1	50.0	2	41	41	0	0.0	4	48
49	Lincoln Medical College.—E.	8	5	3	37.5	2	3	2	1	33.3	2	5	3	2	40.0	2	5	3	2	40.0	2	49
50	University of Nebraska, College of Medicine	3	3	0	0.0	2	3	3	0	0.0	2	...	...	...	....	..	2	2	0	0.0	1	50
	NEW HAMPSHIRE																					
51	Dartmouth Medical School	6	6	0	0.0	4	1	1	0	0.0	1	5	5	0	0.0	4	....	....	...	....	..	51
	NEW YORK																					
52	Albany Medical College	77	61	16	20.8	7	73	59	14	19.2	6	4	2	2	50.0	2	38	36	2	5.3	2	52
53	Columbia University	95	82	13	13.7	17	83	71	12	14.5	12	12	11	1	8.3	8	36	34	2	5.6	5	53
54	Cornell University Medical College	27	27	0	0.0	2	25	25	0	0.0	1	2	2	0	0.0	1	10	10	0	0.0	1	54
55	Fordham University, School of Medicine	52	38	14	26.9	4	52	38	14	26.9	4	...	...	...	....	..	24	17	7	29.2	1	55
56	Long Island College Hospital	95	91	4	4.2	5	93	89	4	4.3	5	2	2	0	0.0	2	76	74	2	2.6	2	56
57	N. Y. Homeo. Med. Coll. and Flower Hosp.—H.	94	62	32	34.0	11	92	60	32	34.8	9	2	2	0	0.0	2	34	23	11	32.4	4	57
58	New York Med. Coll. and Hosp. for Women.—H.	15	8	7	46.7	1	15	8	7	46.7	1	...	...	...	....	..	11	6	5	45.5	1	58
59	Syracuse University, College of Medicine	27	27	0	0.0	4	25	25	0	0.0	2	2	2	0	0.0	2	18	18	0	0.0	1	59
60	University and Bellevue Hospital Medical College	68	63	5	7.3	7	63	59	4	6.3	5	5	4	1	20.0	3	35	32	3	8.6	3	60
61	University of Buffalo Department of Medicine	45	39	6	13.3	2	44	39	5	11.4	2	1	0	1	100.0	1	36	34	2	5.6	2	61
	NORTH CAROLINA																					
62	North Carolina Medical College	22	15	7	31.8	5	20	15	5	25.0	4	2	0	2	100.0	2	8	8	0	0.0	1	62
	OHIO																					
63	Eclectic Medical College.—E.	33	28	5	15.2	9	29	26	3	10.3	7	4	2	2	50.0	3	26	24	2	7.7	6	63
64	Ohio State University, College of Medicine	67	66	1	1.5	5	67	66	1	1.5	5	...	...	...	....	..	65	65	0	0.0	4	64
65	Ohio State University, Coll. of Homeo. Med.—H.	7	7	0	0.0	1	7	7	0	0.0	1	...	...	...	....	..	7	7	0	0.0	1	65
66	University of Cincinnati, College of Medicine	28	28	0	0.0	7	24	24	0	0.0	4	4	4	0	0.0	3	24	24	0	0.0	4	66
67	Western Reserve University, School of Medicine	59	59	0	0.0	6	58	58	0	0.0	5	1	1	0	0.0	1	53	53	0	0.0	2	67
	OKLAHOMA																					
68	University of Oklahoma, School of Medicine	20	16	4	20.0	6	19	16	3	15.8	5	1	0	1	100.0	1	13	12	1	7.7	2	68
	OREGON																					
69	University of Oregon, Department of Medicine	23	21	2	8.7	5	19	17	2	10.5	4	4	4	0	0.0	3	12	10	2	16.7	3	69
	PENNSYLVANIA																					
70	Hahnemann Medical College and Hospital.—H.	21	21	0	0.0	6	21	21	0	0.0	6	...	...	...	....	..	4	4	0	0.0	3	70
71	Jefferson Medical College	174	161	13	7.5	27	167	156	11	6.6	27	7	5	2	28.6	5	45	45	0	0.0	17	71
72	Medico-Chirurgical College of Philadelphia	90	74	16	17.8	16	89	73	16	18.0	15	1	1	0	0.0	1	14	12	2	14.3	7	72
73	Temple University, Department of Medicine	24	19	5	20.8	5	23	18	5	21.8	4	1	1	0	0.0	1	....	....	...	....	..	73
74	University of Pennsylvania, School of Medicine	72	69	3	4.2	20	62	61	1	1.6	18	10	8	2	20.0	7	19	19	0	0.0	9	74
75	University of Pittsburgh, School of Medicine	15	15	0	0.0	5	14	14	0	0.0	4	1	1	0	0.0	1	....	....	...	....	..	75
76	Woman's Medical College of Pennsylvania	27	22	5	18.5	9	22	18	4	18.2	7	5	4	1	20.0	5	3	3	0	0.0	2	76
	SOUTH CAROLINA																					
77	Medical College of the State of South Carolina	24	19	5	20.8	3	19	19	0	0.0	3	5	0	5	100.0	2	18	18	0	0.0	3	77
	TENNESSEE																					
78	Lincoln Memorial University, Medical Department	15	14	1	6.7	5	15	14	1	6.7	5	...	...	...	....	..	14	13	1	7.2	5	78
79	Meharry Medical College	148	81	67	45.3	20	139	78	61	43.9	18	9	3	6	66.7	7	87	61	26	29.9	13	79
80	University of Tennessee,	83	67	16	19.3	10	81	66	15	18.5	8	2	1	1	50.0	2	63	53	10	15.9	7	80
81	Univ. of West Tennessee,	28	10	18	64.3	9	27	10	17	63.0	9	1	0	1	100.0	1	6	3	3	50.0	2	81
82	Vanderbilt University, Medical Department	111	105	6	5.4	18	109	104	5	4.6	18	2	1	1	50.0	2	83	83	0	0.0	10	82
	TEXAS																					
83	Baylor University, Co[illegible]	29	24	5	17.2	4	27	22	5	18.5	3	2	2	0	0.0	2	26	21	5	19.2	2	83
84	Fort Worth School of [illegible]	7	6	1	11.3	2	7	6	1	14.3	2	...	...	...	....	..	6	5	1	16.7	2	84
85	University of Texas, [illegible]	37	37	0	0.0	7	37	37	0	0.0	7	...	...	...	....	..	30	30	0	0.0	3	85
	VERMONT																					
86	University of Vermont, College of Medicine	39	34	5	12.8	9	34	31	3	8.8	8	5	3	2	40.0	4	9	9	0	0.0	3	86
	VIRGINIA																					
87	Medical College of Virginia	124	113	11	8.9	11	122	111	11	9.0	10	2	2	0	0.0	2	91	86	5	5.5	6	87
88	University of Virginia, Department of Medicine	25	25	0	0.0	11	20	20	0	0.0	7	5	5	0	0.0	5	16	16	0	0.0	4	88
	WISCONSIN																					
89	Marquette University, School of Medicine	53	52	1	1.9	8	53	52	1	1.9	8	...	...	...	....	..	46	46	0	0.0	2	89
	CANADA																					
90	Dalhousie University, Faculty of Medicine	1	1	0	0.0	1	1	1	0	0.0	1	...	...	...	....	..	....	....	...	....	..	90
91	Laval University, Faculty of Medicine	5	2	3	60.0	5	3	2	1	33.3	3	2	0	2	100.0	2	1	1	0	0.0	1	91
92	McGill University, Faculty of Medicine	16	13	3	18.7	10	10	9	1	10.0	7	6	4	2	33.3	5	1	1	0	0.0	1	92
93	Montreal School of Medicine and Surgery	2	2	0	0.0	2	2	2	0	0.0	2	...	...	...	....	..	....	....	...	....	..	93
94	Queen's University, Faculty of Medicine	3	2	1	33.3	3	2	1	1	50.0	2	1	1	0	0.0	1	....	....	...	....	..	94
95	University of Toronto, Faculty of Medicine	17	16	1	5.9	12	8	7	1	12.5	5	9	9	0	0.0	7	1	1	0	0.0	1	95
96	Western University, Faculty of Medicine	4	3	1	25.0	4	4	3	1	25.0	4	...	...	...	....	..	....	....	...	....	..	96
97	Foreign Colleges	78	43	35	44.9	21	19	7	12	63.2	12	59	36	23	39.0	18	....	....	...	....	..	97
98	Miscellaneous Medical Colleges	294	164	130	44.2	44	119	60	59	49.6	31	175	104	71	40.6	42	2	2	0	0.0	1	98
	Totals	4850	4123	727	15.0	..	4283	3738	545	12.7	..	567	385	182	32.1	..	2804	2596	208	7.4		

TABLE D.—NONRECOGNITION OF MEDICAL COLLEGES

This Table, Based on Official Reports, Shows the Numerous Pitfalls to be Avoided by Prospective Medical Students

The meaning of the letters (a, b, c, d, x) is given in the footnotes.

Marginal Number	COLLEGE	Classification by Council on Medical Education	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	Reported Non-Recognition by State Licensing Boards			Marginal Number
			Alabama	Alaska	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. of Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	Porto Rico	No. of State Boards apparently giving full recognition	No. of State Boards reporting college diplomas not fully recognized	Percentage of State Boards granting full recognition	
1	University of Alabama, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	1
2	University of Arkansas, Medical Department	B	b	..	b	..	..	a	..	x	..	..	..	..	d	b	b	x	..	b	..	b	...	..	b	..	..	x	..	..	x	b	b	..	..	b	x	b	..	x	x	x	c	..	..	..	..	x	b	..	b	..	..	26	25	51	2
3	College of Physicians and Surgeons, San Francisco	C	x	..	b	x	..	x	x	x	..	x	x	..	x	b	x	x	x	x	x	x	...	x	x	x	x	x	..	..	x	x	x	x	x	x	x	x	..	x	x	x	c	..	x	..	x	x	b	x	x	..	x	11	40	22	3
4	Leland Stanford Junior Univ., School of Med.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	4
5	University of California Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	5
6	College of Physicians and Surgeons, Los Angeles	B	..	..	..	..	..	..	..	x	..	..	..	..	d	..	..	x	..	..	..	..	...	x	..	..	..	x	..	..	x	..	..	..	..	..	x	..	..	..	x	x	..	..	..	..	..	x	..	..	..	..	..	41	10	80	6
7	Oakland College of Medicine and Surgery	B	b	..	b	..	..	a	..	x	..	..	..	..	x	b	b	x	..	b	..	b	...	x	b	..	..	x	..	..	x	x	b	x	..	b	x	b	..	..	x	x	c	..	..	..	..	x	b	..	b	..	..	25	26	49	7
8	College of Medical Evangelists	C	x	..	..	x	..	x	x	x	..	x	x	..	x	x	x	x	x	x	x	x	...	x	x	x	x	x	..	..	x	x	x	x	x	x	x	x	..	x	x	x	c	..	x	..	x	x	..	x	x	..	x	13	38	25	8
9	University of Colorado, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	9
10	Yale University, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	10
11	George Washington University, Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	11
12	Georgetown University, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	12
13	Howard University, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	13
14	Atlanta Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	50	1	98	14
15	University of Georgia, Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	15
16	Loyola University, Medical Department	B	b	..	b	..	..	x	..	x	..	..	..	..	..	b	b	x	x	b	..	b	...	x	b	..	..	x	..	..	x	x	b	x	..	b	x	b	..	x	x	x	c	..	..	..	..	x	b	..	b	..	..	24	27	47	16
17	Chicago College of Medicine and Surgery	B	b	..	b	..	..	x	..	x	..	..	..	..	..	b	b	x	x	b	..	x	...	x	b	..	..	x	..	..	x	x	b	x	..	b	x	b	..	x	x	x	c	..	..	..	..	x	b	..	x	..	..	24	27	47	17
18	Chicago Hospital College of Medicine	C	x	..	b	x	..	x	x	x	..	x	x	..	..	x	x	x	x	x	x	x	...	x	x	x	x	x	..	..	x	x	x	x	x	x	x	x	..	x	x	x	c	..	x	..	x	x	b	x	x	..	x	12	39	24	18
19	Hahnemann Medical College and Hospital, Chicago	B	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	x	..	..	..	..	...	..	..	..	..	x	..	..	x	x	..	x	..	..	..	..	..	..	x	x	..	..	..	..	..	x	..	..	..	..	..	42	9	82	19
20	Jenner Medical College, Chicago	[1]	x	..	b	x	..	x	x	x	..	x	x	..	..	x	x	x	x	x	x	x	...	x	x	x	x	x	..	..	x	x	x	x	x	x	x	x	..	x	x	x	c	..	x	..	x	x	b	x	x	..	x	12	39	24	20
21	Northwestern University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	21
22	Rush Medical College (University of Chicago)	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	22
23	University of Illinois, College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	23
24	Indiana University, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	24
25	State University of Iowa, College of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	25
26	State University of Iowa, College of Homeo. Med.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	26
27	University of Kansas, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	50	1	98	27
28	University of Louisville, Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	28
29	Tulane University School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	29
30	Bowdoin Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	30
31	Johns Hopkins University, Medical Department	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	31
32	Univ. of Md., School of Med. and Coll. of P. & S.	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	32
33	Boston University, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	33
34	College of Physicians and Surgeons, Boston	C	x	..	b	x	..	x	x	x	..	x	x	..	x	x	x	x	x	x	x	x	...	x	x	x	x	x	..	..	x	x	x	x	x	x	x	x	..	x	x	x	c	..	x	..	x	x	b	x	x	..	x	11	40	22	34
35	Medical School of Harvard University	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	35
36	Tufts College Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	x	..	..	..	..	..	..	..	..	..	..	..	..	..	50	1	98	36
37	Detroit College of Medicine and Surgery	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	37
38	University of Michigan Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	38
39	University of Michigan, Homeopathic Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	39
40	University of Minnesota Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	40
41	University of Mississippi, Department of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	41
42	University of Missouri, School of Medicine*	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	42
43	Kansas City College of Medicine and Surgery	[2]	x	..	b	..	..	x	..	x	..	..	x	..	x	x	x	x	x	x	x	x	...	x	x	x	x	x	..	..	x	x	x	x	x	x	x	x	..	x	x	x	c	..	x	..	x	x	b	x	x	..	x	11	37	27	43
44	National University of Arts and Sciences, Med. Dept.	C	x	..	b	x	..	x	x	x	..	x	x	..	x	b	x	x	x	x	x	x	...	x	x	x	..	x	..	..	x	x	x	x	x	x	x	x	..	x	x	x	c	..	x	..	x	x	b	x	x	..	x	12	39	24	44
45	St. Louis University, School of Medicine	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	45
46	Washington University Medical School	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	46
47	John A. Creighton Medical College	A	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	51	..	100	47

48	University of Nebraska, College of Medicine	A																																																			51	..	100	48
49	Lincoln Medical College, Eclectic, Lincoln, Neb	C	x		b			x		x			x		x	b	x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x		x		x	x	x	c		x		x	x	b	x	x		x	15	36	29	49
50	Dartmouth Medical School*	A																																																			51	..	100	50
51	Albany Medical College	A																																						x													50	1	98	51
52	Columbia University, College of Phys and Surgs	A																																																			51	..	100	52
53	Cornell University Medical College	A																																																			51	..	100	53
54	Fordham University, School of Medicine	A																																																			51	..	100	54
55	Long Island College Hospital.	A																																																			51	..	100	55
56	New York Homeopathic Med Coll and Flower Hosp	B	b		b			a							d	b	b	x		b		b			b			x			x	b	b			b		b			x	x	c					x	b		b			29	22	57	56
57	New York Medical College and Hospital for Women	C	x					x		x			x		x		x	x	x	x	x	x		x	x	x	x	x			x		x		x	x		x		x	x	x			x		x	x		x	x		x	21	30	41	57
58	University and Bellevue Hospital Medical College	A																																																			51	..	100	58
59	Syracuse University, College of Medicine	A																																																			51	..	100	59
60	University of Buffalo, Medical Department	A																																																			51	..	100	60
61	Leonard Medical School*	B								x					d			x						x				x			x	x		x			x			x	x	x						x						38	13	74	61
62	University of North Carolina, School of Medicine*	A																																																			51	..	100	62
63	Wake Forest College School of Medicine*	A																																																			51	..	100	63
64	University of North Dakota, School of Medicine*	A																																																			51	..	100	64
65	Western Reserve University, School of Medicine	A																																																			51	..	100	65
66	Eclectic Medical College	B	b		b			a		x					d	b	b	x		b		b			b			x			x	b	b			b		b			x	x	c					x	b		b			28	23	55	66
67	Medical College of the University of Cincinnati	A																																																			51	..	100	67
68	Ohio State University, College of Medicine	A																																																			51	..	100	68
69	Ohio State University, College of Homeopathic Med	B								x					d			x						x				x			x									x	x	x						x						41	10	80	69
70	University of Oklahoma, School of Medicine	B								x					d			x										x			x						x			x	x	x						x						41	10	80	70
71	University of Oregon, Medical Department	A																																																			51	..	100	71
72	Hahnemann Medical Coll and Hosp, Philadelphia	A																																																			51	..	100	72
73	Jefferson Medical College	A																																																			51	..	100	73
74	Temple University, Medical Department	B	b		b			a		x					d	b	b	x		b		b			b			x			x	x	b	x		b	x	b			x	x	c					x	b		b			26	25	51	74
75	University of Pennsylvania, School of Medicine	A																																																			51	..	100	75
76	Woman's Medical College of Pennsylvania	A																																																			51	..	100	76
77	University of Pittsburgh, School of Medicine	A																																																			51	..	100	77
78	Medical College of the State of South Carolina	A																														x		x						x													48	3	94	78
79	University of South Dakota, College of Medicine*	A																																x																			50	1	98	79
80	Meharry Medical College	B	b		b			a		x					d	b	b	x	x	b		b		x	b			x			x	x	b	x		b		b		x	x	x	c					x	b		b			24	27	47	80
81	Vanderbilt University, Medical Department	A																	x																																		50	1	98	81
82	University of Tennessee, College of Medicine	A																	x																																		50	1	98	82
83	University of West Tennessee, Medical Department	C	x		b	x		x	x	x		x	x		x	x	x	x	x	x	x	x		x	x	x	x	x			x	x	x	x	x	x	x	x		x	x	x	c		x		x	x	b	x	x		x	11	40	22	83
84	University of Texas, Department of Medicine	A																																																			51	..	100	84
85	Baylor University, College of Medicine	A																																																			51	..	100	85
86	Fort Worth School of Medicine	B								x					d			x						x				x			x	x		x			x			x	x	x						x						38	13	74	86
87	University of Utah, School of Medicine*	A																																																			51	..	100	87
88	University of Vermont, College of Medicine	A																																																			51	..	100	88
89	Medical College of Virginia	A																																																			51	..	100	89
90	University of Virginia, Department of Medicine	A																																																			51	..	100	90
91	West Virginia University, School of Medicine*	A																																																			51	..	100	91
92	Marquette University School of Medicine	A																																						x													50	1	98	92
93	University of Wisconsin Medical School*	A																																																			51	..	100	93
	Number of Medical Colleges of which at least some graduates are evidently ineligible for license	.	18		13	7		18	7	23		7	10		10	17	18	24	15	18	10	18		18	18	[illegible]	9	24			24	21	18	19	10	18	18	18	.	24	24	24	17		10		10	24	16	10	18		10				
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51				

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* Eleven medical colleges give only the first two years of the medical course Work taken in seven of these is apparently fully accepted by all boards for advanced standing in other recognized medical colleges. Work taken in one other is reported not so recognized in twelve states unless the student entered with two years of preliminary college work

† Classification revised to March 15, 1917.

1. Rated in Class C when last inspected—1912 Has recently refused reinspection Data otherwise obtained do not indicate that a higher rating is warranted

2 This college is an offshoot of the Eclectic Medical University, an institution rated in Class C It is reported *as not recognized by the Missouri State Board of Health*

(a) Colorado registers without further examination only graduates of medical colleges in good standing who present licenses issued after examination granted by other state licensing boards The law permits any one, graduate or nongraduate, to try the board's written examination No graduate, hereafter, is eligible to license on indorsement of credentials *unless he completed two years of collegiate work* prior to beginning the study of medicine.

(b) Besides Colorado and South Dakota [see (a) and (c)], there are nineteen states which under the provisions of the medical practice acts, or through authorized board rulings, report that no graduate may take examinations in those states *unless, before entering on the study of medicine, he or she has completed at least two years of work in an approved college or university* In Indiana the rule applies to all candidates who matriculated in medical college after Jan 1, 1911 In the following states the rule applies to graduates in and after the years given: In Minnesota and North Dakota, 1912; in Iowa, 1915; in Alabama, New Hampshire and Wisconsin, 1919; in New Jersey, Oklahoma and Virginia, 1921; and in Arizona, Kansas, Louisiana, Maryland, Montana, New Mexico, Rhode Island, South Carolina and Washington, 1922.

(c) South Dakota reports that no medical college will be considered in good standing which accepts or graduates students who do not have the required preliminary education — *two years of collegiate work*. This has applied to all colleges since Aug. 1, 1911, and to graduates of 1915 and thereafter.

(d) College not fully recognized (March 1, 1917). Under investigation by the Illinois State Board of Health

(x) *According to official reports* the licensing boards of the states thus indicated do not grant full recognition to, or have taken action refusing to admit to their examinations graduates of, the colleges marked by this letter—x.

CONCLUDED FROM PAGE 1101

shows that 2,804, or 57.8 per cent., of all candidates examined during the year graduated in 1916, including three who graduated from Canadian medical colleges. Educational statistics show that the medical colleges of the United States graduated 3,518 students last year; therefore, 79.7 per cent. of all graduates in 1916 took examinations for license during that year. In some of the states, graduates in medicine are allowed to serve as hospital interns without first becoming licensed practitioners, which doubtless accounts for some of the remaining 20.3 per cent. Of the 1916 graduates examined, 208, or 7.4 per cent., failed.

TABLE E.—COLLEGES GROUPED BY STATES
Showing the Number Examined and Percentage of Failures

All Colleges of	Graduates: Of All Years		Of 1912 to 1916		Of 1911 & Prev.		Of 1916		State Rank According to the Number Examined	Rank According to Successes at Examinations
	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed	No. Examined	Per Cent. Failed		
Alabama	26	19.2	18	11.1	8	37.5	15	6.7	23	25
Arkansas	20	15.0	17	5.9	3	66.7	16	6.3	27	21
California	125	3.2	121	3.3	4	0.0	98	2.0	12	5
Colorado	18	0.0	15	0.0	3	0.0	12	0.0	28	1
Connecticut	12	8.3	11	9.1	1	0.0	6	0.0	30	13
Dist. of Columbia	87	20.7	68	14.7	19	42.1	25	12.0	14	27
Georgia	185	10.3	177	10.2	8	12.5	152	5.9	8	17
Illinois	794	13.0	734	10.6	60	25.0	534	9.6	1	20
Indiana	37	5.7	36	5.6	1	0.0	35	5.7	21	9
Iowa	36	2.8	28	0.0	8	12.5	28	0.0	22	3
Kansas	11	0.0	11	0.0	.....	......	11	0.0	31	1
Kentucky	79	15.2	67	11.9	12	33.3	53	5.7	15	22
Louisiana	97	5.2	86	4.7	11	9.1	78	2.6	13	7
Maine	13	7.7	13	7.7	.....	......	10	10.0	29	11
Maryland	228	12.3	210	11.9	18	16.7	130	13.8	6	18
Massachusetts	231	15.4	212	12.3	19	42.1	128	9.4	5	23
Michigan	144	5.6	128	3.1	16	25.0	119	2.5	11	8
Minnesota	42	0.0	38	0.0	4	0.0	34	0.0	19	1
Missouri	175	5.1	171	5.3	4	0.0	152	3.9	9	6
Nebraska	64	9.4	57	5.3	7	42.9	48	4.2	17	15
New Hampshire	6	0.0	1	0.0	5	0.0	.....	......	32	1
New York	595	16.3	565	16.3	30	16.7	327	10.4	2	24
North Carolina	22	31.8	20	25.0	2	100.0	8	0.0	26	30
Ohio	194	3.1	185	2.2	9	22.2	175	1.1	7	4
Oklahoma	20	20.0	19	15.8	1	100.0	13	7.7	27	26
Oregon	23	8.7	19	10.5	4	0.0	12	16.7	25	14
Pennsylvania	423	9.9	398	9.3	25	20.0	85	2.4	3	16
South Carolina	24	20.8	19	0.0	5	100.0	18	0.0	24	28
Tennessee	385	28.1	371	26.7	14	64.3	253	15.8	4	29
Texas	73	8.2	71	8.5	2	0.0	62	9.7	16	12
Vermont	39	12.8	34	8.8	5	40.0	9	0.0	20	19
Virginia	149	7.4	142	7.7	7	0.0	107	4.7	10	10
Wisconsin	53	1.9	53	1.9	.....	......	46	0.0	18	2
Totals Ex. in 1916	4430	12.5	4115	11.4	315	26.7	2799	7.4	....	....

This table gives data relating to the group of colleges in each state. For example, it shows that, of all the medical schools in Tennessee, 385 graduates of various years were examined by state boards during 1916, and of this number, 28.1 per cent. failed. Of the 371 who graduated in recent years (1912 to 1916 inclusive), 26.7 per cent. failed; of the 14 who graduated previous to 1912, 64.3 per cent. failed, and of the 253 graduates of 1916, 15.8 per cent. failed.

The ninth column gives the rank of each state group of colleges according to the number of graduates examined. The Illinois group of colleges leads, having 794 graduates examined by state boards during 1916, followed by New York with 595, Pennsylvania with 423, Tennessee with 385, Massachusetts with 231 and Maryland with 228.

The last column gives the rank of each state group of colleges according to the success of the graduates at the examinations. It is interesting to compare the figures of these two last columns. While the Illinois group ranks first according to the number examined it ranks twentieth in the success of its graduates at the examinations. While Pennsylvania ranks third as to the number examined, it ranks sixteenth in the success of its graduates at the examinations, and while Tennessee ranks fourth as to the number examined, it ranks as the twenty-ninth in the success of its graduates at the examinations.

NONRECOGNITION OF MEDICAL COLLEGES

Table D shows for each college, from official reports, the states in which its diplomas are not given unqualified recognition. Nonrecognition is expressed by different terms in different states. Some boards list colleges as "in good standing" or "not in good standing," some give them as "reputable" or "not reputable"; in New York full recognition is given only to colleges which are "registered," and in Michigan colleges are divided into groups, only those of Group I having full recognition. There are twenty-one states which do not register graduates of a medical college unless such graduates had completed at least two years of collegiate work prior to entering on the study of medicine. This table also shows the latest rating given to each college by the Council on Medical Education.

TABLE 1.—RECOGNITION OF MEDICAL COLLEGES (BASED ON TABLE D)

	Number of Colleges
Recognized by all state boards	60
Not recognized by 1 to 3 state boards	9
Not recognized by 9 to 27 state boards	14
Not recognized by 30 to 40 state boards	10
Total	93

From the point of view of the prospective student who may be selecting a medical college, the facts in Table D are of extreme importance. There are 60 medical colleges now having complete recognition in all states. There are 9 others for which the one or two instances of nonrecognition are due to certain technicalities. If the student gets his medical training in one of the remaining 24 colleges, he will find on graduation that his diploma is not recognized in from 9 to 40 states!

Without the information published in Table D, these state board statistics would be not merely incomplete—*they would be actually misleading.* For example, 67 graduates of the National University of Arts and Sciences Medical Department, of St. Louis, were examined during 1916, 54 in Missouri and 13 elsewhere and only 8, or 11.9 per cent., failed. The low failure percentage makes this college appear to rank among the better teaching institutions in the country. How different the picture, however, when the facts set forth in Table D show that graduates of this college are admitted to the licensing examination in only ten states. In other words its diplomas are reported not recognized in 39 states!

During the four years this table has been published, the totals of fully recognized colleges were, respectively, 31, 33, 42 and 58. Thirty-nine state licensing boards, to some extent at least, are utilizing their legal power to refuse recognition to medical colleges which do not exact for admission certain educational qualifications, or which otherwise do not meet the requirements in the respective states. In the other ten states, however, and in the District of Columbia, this table indicates that either the practice acts do not give the boards authority to enforce a requirement of reasonable standards, or else the boards are not exercising that authority. It is evident that if the graduates of low-standard medical colleges are not eligible for license in the majority of states, they will flock to the other eleven which still grant them recognition. *These eleven states, therefore, are literally the dumping ground for the output of low-grade medical colleges, and will remain so until the licensing boards obtain the needed legal powers, or until the boards having the authority take action in the matter.*

SOURCE OF CANDIDATES REGISTERED BY EXAMINATION

Of the 4,123 physicians registered by examination in 1916, 3,106, or 75.3 per cent., graduated from Class A medical colleges; 654, or 15.9 per cent., were from Class B medical colleges; and only 156, or 3.8 per cent., were from Class C medical colleges. Five per cent. of all candidates came from medical colleges which have ceased to exist and from foreign medical colleges. A comparison of these figures with the

TABLE 2.—SOURCE OF CANDIDATES REGISTERED BY EXAMINATION

	1910		1916	
	Number	Per Cent.	Number	Per Cent.
Class A medical colleges	3,870	67.7	3,106	75.3
Class B medical colleges	977	17.1	654	15.9
Class C	292	5.1	156	3.8
Miscellan	311	5.5	164	4.0
Foreign	70	1.2	43	1.0
Undergraduates	192	3.4	.....	....
Totals	5,712	100	4,123	100

results for 1910, as shown in Table 2, will be interesting. The differences would be greater if the classification in 1910 had been as strict as that in 1916. It is interesting to note that in 1910, 3 4 per cent. of all candidates were undergraduates. Of the 1916 graduates, not a single undergraduate was registered.

TABLE 3—FAILURE PERCENTAGES ACCORDING TO SOURCE OF APPLICANTS

Medical Colleges	1910 Examined	1910 Passed	1910 Failed	1910 Per Cent. Failed	1916 Examined	1916 Passed	1916 Failed	1916 Per Cent Failed
Class A	4,318	3,870	448	10 4	3,306	3,106	200	8 5
Class B	1,268	977	291	22 9	861	654	207	24 0
Class C	479	292	187	39 0	221	156	65	29 4*
Miscellaneous	478	311	167	34 9	294	164	130	44 2
Foreign	108	70	38	35 2	78	43	35	44 9
Undergraduates	353	192	161	45 6	......	......	......	......

* Class C colleges at present, as a rule, are not recognized in from 33 to 29 states This percentage, therefore, is the result of examinations by partisan boards and in states where the boards do not have, or are not using, the authority to refuse recognition.

Table 3 will also be interesting, in that the failure percentages of candidates coming from the various groups of colleges support the classifications. It will be noted that graduates of Class A medical schools had a much lower percentage of failures than those from colleges in Classes B and C. In this connection it should be stated that the percentage of failures for Class C medical colleges would doubtless be higher except for the fact that graduates of several of these colleges were examined largely, if not entirely, by partisan or sectarian boards, and not by single boards which examine graduates of all schools.

Study of Totals and Percentages

A study of totals and percentages as compared with previous years is of interest. The total examined in 1916—4,850—is the lowest number of candidates examined for license in any year since the compiling of these statistics began. (See Table 4.) The number examined was 463 less than in 1915, 720 less than in 1914, and 3,185 less than in 1906, when 8,035 candidates were examined. Statistics regarding physicians licensed in the various states by reciprocity and by other methods are given in Tables I, J and K. By all methods—examination, reciprocity, under exemption, etc.—5,461 physicians were licensed during 1916, or 411 less than in 1915, 336 less than in 1914, and 2,404 less than in 1906, when 7,865 physicians were licensed.

TABLE F.—COLLEGES HAVING FIFTY OR MORE EXAMINED

Table Shows Total Number Examined, Total Number Passed, Total Number Failed, Percentage of Failures and Number of States in Which Each College Had Representatives

COLLEGE	Graduates of All Years No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	Graduates of 1912-1916 No. Examined	No. Passed	No. Failed	Per Cent. Failed	No. of States	Graduates of 1911 and Previous No. Examined	No. Passed	No Failed	Per Cent. Failed	No of States	Graduates of 1916 No. Examined	No Passed	No. Failed	Per Cent. Failed	No. of States	Marginal Number, Table A
Chicago College of Medicine and Surgery	225	190	35	15 5	27	220	188	32	14 5	27	5	2	3	60 0	5	160	141	19	11 9	16	18
Jefferson Medical College	174	161	13	7 5	27	167	156	11	6 6	27	7	5	2	28 6	5	45	45	0	0 0	17	71
Loyola	163	125	38	23 3	24	157	121	36	22 9	22	6	4	2	33 3	5	107	84	23	21 5	14	72
Atlanta	157	142	15	9 6	12	149	135	14	9 4	11	8	7	1	12 5	6	129	123	6	4 7	7	15
Meharry	148	81	67	45 3	20	139	78	61	43 9	18	9	3	6	66 7	7	87	61	26	29 9	13	79
Rush Medical College	145	137	8	5 5	24	123	121	2	1 6	18	22	16	6	27 3	13	86	84	2	2 3	13	24
University of Illinc	143	139	4	2 8	21	130	128	2	1 5	18	13	11	2	15 4	6	111	110	1	0 9	9	25
University of Mary	125	104	21	16 8	17	123	102	21	17.1	17	2	2	0	0 0	2	83	67	16	19 3	12	34
Medical College of Virginia	124	113	11	8 9	11	122	111	11	9 0	10	2	2	0	0 0	2	91	86	5	5 5	6	87
Vanderbilt University,	111	105	6	5 4	18	109	104	5	4 6	18	2	1	1	50 0	2	83	83	0	0 0	10	82
Johns Hopkins Univer	103	96	7	6 8	29	87	83	4	4 6	25	16	13	3	18 7	9	47	45	2	4 3	10	33
Medical School of Ha	99	92	7	7 1	26	92	88	4	4 3	25	7	4	3	42 9	5	47	45	2	4 3	15	37
Tulane University of	97	92	5	5 2	17	86	82	4	4 7	12	11	10	1	9.1	10	78	76	2	2 6	10	31
Long Island College	95	91	4	4 2	5	93	89	4	4 3	5	2	2	0	0 0	2	76	74	2	2 6	2	56
Columbia University	95	82	13	13 7	17	83	71	12	14 5	12	12	11	1	8 3	8	36	34	2	5 6	5	53
N Y. Homeo Med Coll and Flower Hospital	94	62	32	34 0	11	92	60	32	34 8	9	2	2	0	0 0	2	34	23	11	32 4	4	57
Medico-Chirurgical College of Philadelphia	90	74	16	17.8	16	89	73	16	18 0	15	1	1	0	0 0	1	14	12	2	14.3	7	72
Tufts College Medical School	86	74	12	13 9	11	80	70	10	12 5	9	6	4	2	33 3	4	56	53	3	5 4	5	38
University of Tennessee, College of Medicine	83	67	16	19 3	10	81	66	15	18 5	8	2	1	1	50 0	2	63	53	10	15 9	7	80
University of Louisville, Medical Department	79	67	12	15 2	23	67	59	8	11 9	16	12	8	4	33 3	12	53	50	3	5 7	10	30
Albany Medical College	77	61	16	20 8	7	73	59	14	19 2	6	4	2	2	50 0	2	38	36	2	5 3	2	52
University of Michigan	76	72	4	5 3	17	65	63	2	3 1	10	11	9	2	18 2	11	62	61	1	1 6	8	46
University of Pennsylva	72	69	3	4 2	20	62	61	1	1 6	18	10	8	2	20 0	7	19	19	0	0 0	9	74
University and Bellevue Med Coll	68	63	5	7 3	7	63	59	4	6 3	5	5	4	1	20 0	3	35	32	3	8 6	3	60
Northwestern University Medical School	67	62	5	7 5	15	57	54	3	5 3	13	10	8	2	20 0	7	43	41	2	4.7	7	23
National University of Arts and Sciences	67	59	8	11 9	7	67	59	8	11 9	7	..	......	...	......	....	61	55	6	9 8	5	44
Ohio State University College of Medicine	67	66	1	1 5	5	67	66	1	1 5	5	..	....	..	....	..	65	65	0	0 0	4	64
St Louis University, School of Medicine	64	63	1	1 6	11	61	60	1	1 6	9	3	3	0	0 0	3	50	50	0	0 0	6	46
Western Reserve University, School of Medicine	59	59	0	0 0	6	58	58	0	0 0	5	1	1	0	0 0	1	53	53	0	0 0	2	67
Detroit College of Medicine and Surgery	57	53	4	7.0	5	52	50	2	3 8	3	5	3	2	40 0	3	50	48	2	4 0	1	39
John A Creighton Medical College	53	50	3	5 7	12	51	49	2	3 9	11	2	1	1	50 0	2	41	41	0	0 0	4	48
Marquette University	53	52	1	1 9	8	53	52	1	1 9	8	.. .	......	...	... .	...	46	46	0	0 0	2	89
Fordham University, School of Medicine	52	38	14	26 9	4	52	38	14	26 9	4	. .	... .	.. .	....	....	24	17	7	29 2	1	55
Totals	3268	2861	407	12 4	..	3070	2713	357	11 6	.	198	148	50	25 3	...	2073	1913	160	7.7		

This table is especially interesting, since it gives data relating to the 23 larger medical colleges arranged according to the number of graduates examined This allows of comparison between colleges having classes of nearly equal size For the fourth consecutive year the Chicago College of Medicine and Surgery has had the largest number, the position having been held by the College of Physicians and Surgeons of Chicago in 1906, 1907 and 1912 In 1908 Jefferson Medical College had the highest number examined. In 1909, 1910 and 1911 the University of Louisville Medical Department had the largest number examined The first place from the standpoint of the number examined, however, *does not always mean first place from the standpoint of scholarship* Note the percentages of failures The highest failure percentages are for Meharry Medical College, 45 3; New York Homeopathic Medical College, 34; Fordham University School of Medicine, 26 9; Loyola University School of Medicine, 23.3, and Albany Medical College, 20.8.

Of the 11 colleges having 100 or more examined, 7 have failure percentages of less than 10, while four stand out prominently with large failure percentages—15 5, 16 8, 23 3 and 45 3, and high percentages hold even in respect to graduates of 1916

Of the 22 colleges having between 50 and 100 graduates examined, thirteen had failure percentages of less than 10; six had failure percentages between 10 and 20, and three had failure percentages above 20

The average percentage of failures for these larger colleges for graduates of 1911 and previous years was 25 3; for graduates of 1912 to 1916 inclusive (recent graduates), 11 6; for graduates of 1916, 7.7, and for graduates of all years, 12 4 Of the 4,430 graduates of the 89 colleges in the United States which had graduates examined by state boards in 1916, these larger (37.1 per cent. of all) schools furnished 3,268, or 74 per cent., of the graduates examined.

Other deductions from the larger tables presented in Tables E to H are worthy of special study.

Study of Colleges by State Groups

Table E gives the results for the group of colleges located in each state. It shows what states are furnishing the largest number of physicians, and the failure percentages indicate what kind of training these colleges are furnishing, so far as may be judged from the results of state board examinations. Of the thirty-three states having medical colleges which grant degrees, twelve furnished 100 or more candidates examined, six states furnished more than 200 each, and four furnished

TABLE G.—COMPARISON OF RESULTS IN HOME STATES AND ELSEWHERE. BASED ON TABLE B.

COLLEGES	Total Examined	Results in Home State			Results in Other States		
		Passed	Failed	Per Cent. Failed	Passed	Failed	Per Cent. Failed
ALABAMA .... +94.1	**18**	**16**	**1**	**5.9**	**0**	**1**	**100.0**
University of Alabama, School of Med. ..	18	16	1	5.9	0	1	100.0
ARKANSAS .... —	**17**	**16**	**1**	**5.9**	....	....	.....
University of Arkansas, Medical Dept. ...	17	16	1	5.9	....	....	.....
CALIFORNIA .... +9.2	**121**	**101**	**2**	**1.9**	**16**	**2**	**11.1**
College of Medical Evangelists............	13	9	0	0.0	4	0	0.0
College of Phys. and Surgs., Los Angeles	26	23	0	0.0	3	0	0.0
Coll. of Phys. and Surgs., San Francisco	9	5	1	16.7	2	1	33.3
Hahnemann Med. Coll. of the Pacific.....	13	10	1	9.1	1	1	50.0
Leland Stanford Junior University........	25	22	0	0.0	3	0	0.0
Oakland College of Med. and Surg.	2	2	0	0.0	....	....	.....
University of California Medical School..	33	30	0	0.0	3	0	0.0
COLORADO .... —	**15**	**11**	**0**	**0.0**	**4**	**0**	**0.0**
University of Colorado..................	15	11	0	0.0	4	0	0.0
CONNECTICUT .... —16.7	**11**	**5**	**1**	**16.7**	**5**	**0**	**0.0**
Yale University..........................	11	5	1	16.7	5	0	0.0
DISTRICT OF COLUMBIA .... +1.6	**68**	**19**	**3**	**13.6**	**39**	**7**	**15.2**
Georgetown University	20	4	0	0.0	15	1	6.3
George Washington University............	24	14	1	6.7	8	1	11.1
Howard University	24	1	2	66.7	16	5	23.8
GEORGIA .... +26.1	**177**	**108**	**0**	**0.0**	**51**	**18**	**26.1**
Atlanta Medical College................	*149*	*97*	*0*	*0.0*	*38*	*14*	*26.9*
Georgia Coll. of Eclectic Med. and Surg. ..	9	*	....	.....	6	3	33.3
University of Georgia....................	19	11	0	0.0	7	1	12.5
ILLINOIS .... +0.2	**734**	**465**	**63**	**11.9**	**181**	**25**	**12.1**
Chicago College of Medicine and Surgery	220	138	20	12.7	50	12	19.4
Chicago Hospital College of Medicine.....	10	3	6	66.7	1	0	0.0
Hahnemann Medical College and Hospital	25	16	3	15.8	6	0	0.0
Jenner Medical College..................	12	7	4	36.3	1	0	0.0
Loyola University	157	89	26	22.6	32	10	23.8
Northwestern University.................	57	39	2	4.9	15	1	6.3
Rush Medical College....................	123	77	1	1.3	44	1	2.2
University of Illinois..................	130	96	1	1.0	32	1	3.0
INDIANA .... —5.7	**36**	**33**	**2**	**5.7**	**1**	**0**	**0.0**
Indiana University	36	33	2	5.7	1	0	0.0
IOWA .... —	**28**	**27**	**0**	**0.0**	**1**	**0**	**0.0**
State Univ. of Iowa, Coll. of Med.	28	27	0	0.0	1	0	0.0
State Univ. of Iowa, Coll. of Homeo. Med.	....	....	....	.....	....	....	.....
KANSAS .... —	**11**	**11**	**0**	**0.0**	....	....	.....
University of Kansas....................	11	11	0	0.0	....	....	.....
KENTUCKY .... +17.2	**67**	**38**	**2**	**5.0**	**21**	**6**	**22.2**
University of Louisville................	67	38	2	5.0	21	6	22.2
LOUISIANA .... +11.1	**86**	**50**	**0**	**0.0**	**32**	**4**	**11.1**
Tulane University of Louisiana...........	86	50	0	0.0	32	4	11.1
MAINE .... —9.1	**13**	**10**	**1**	**9.1**	**2**	**0**	**0.0**
Bowdoin Medical School..................	13	10	1	9.1	2	0	0.0
MARYLAND .... —9.2	**210**	**78**	**16**	**17.0**	**107**	**9**	**7.8**
Johns Hopkins University................	87	37	2	5.1	46	2	4.2
University of Maryland..................	123	41	14	25.5	61	7	10.3
MASSACHUSETTS .... —1.2	**212**	**102**	**15**	**12.8**	**84**	**11**	**11.6**
Boston University	23	13	1	7.2	8	1	11.1
College of Phys. and Surgs., Boston.....	17	7	8	53.3	0	2	100.0
Medical School of Harvard University....	92	32	0	0.0	56	4	6.7
Tufts College Medical School............	80	50	6	10.7	20	4	16.7
MICHIGAN .... +11.5	**128**	**111**	**2**	**1.8**	**13**	**2**	**13.3**
Detroit College of Medicine and Surgery..	52	48	2	4.0	2	0	0.0
University of Michigan, Medical School...	65	55	0	0.0	8	2	20.0
University of Michigan, Homeo. Med. Sch.	11	8	0	0.0	3	0	0.0
MINNESOTA .... —	**38**	**33**	**0**	**0.0**	**5**	**0**	**0.0**
University of Minnesota..................	38	33	0	0.0	5	0	0.0
MISSOURI .... +4.2	**171**	**104**	**4**	**3.7**	**58**	**5**	**7.9**
Kansas City College of Med. and Surg. ...	12	*	....	.....	12	0	0.0
National University of Arts and Sciences..	67	54	4	6.9	5	4	44.4
Southwest School of Medicine and Hosp.	13	*	....	.....	13	0	0.0
St. Louis University.....................	61	36	0	0.0	24	1	4.0
Washington University	18	14	0	0.0	4	0	0.0
NEBRASKA .... +23.1	**57**	**44**	**0**	**0.0**	**10**	**3**	**23.1**
John A. Creighton Medical College........	51	40	0	0.0	9	2	18.2
Lincoln Medical College..................	3	2	0	0.0	0	1	100.0
University of Nebraska...................	3	2	0	0.0	1	0	0.0
NEW HAMPSHIRE .... —	**1**	....	....	.....	**1**	**0**	**0.0**
Dartmouth Medical School...............	*1*	....	....	.....	*1*	*0*	*0.0*
NEW YORK .... —4.7	**565**	**408**	**83**	**16.9**	**65**	**9**	**12.2**
Albany Medical College	73	50	12	19.4	9	2	18.2
Columbia University	83	52	10	16.1	19	2	9.5
Cornell University Medical College.......	25	25	0	0.0	....	....	.....
Fordham University	52	33	14	29.8	5	0	0.0
Long Island College Hospital...........	93	85	3	3.4	4	1	20.0
N. Y. Homeo. Med. Coll. and Flower Hosp.	92	44	28	38.9	16	4	20.0
N. Y. Med. Coll. and Hosp. for Women...	15	8	7	46.7	....	....	.....
Syracuse University	25	24	0	0.0	1	0	0.0
University and Bellevue Hosp. Med. Coll.	63	50	4	7.4	9	0	0.0
University of Buffalo....................	44	37	5	11.9	2	0	0.0
NORTH CAROLINA .... +62.5	**20**	**14**	**2**	**12.5**	**1**	**3**	**75.0**
North Carolina Medical College...........	20	14	2	12.5	1	3	75.0
OHIO .... +6.8	**185**	**158**	**2**	**1.2**	**23**	**2**	**8.0**
Eclectic Medical College.................	29	18	2	10.0	8	1	11.1
Ohio State University, College of Med. ...	67	61	0	0.0	5	1	16.7
Ohio State Univ., Coll. of Homeo. Med. ..	7	7	0	0.0	....	....	.....
University of Cincinnati, College of Med.	24	21	0	0.0	3	0	0.0
Western Reserve University...............	58	51	0	0.0	7	0	0.0
OKLAHOMA .... +25.6	**19**	**12**	**1**	**7.7**	**4**	**2**	**33.3**
University of Oklahoma...................	19	12	1	7.7	4	2	33.3
OREGON .... —16.7	**19**	**10**	**2**	**16.7**	**7**	**0**	**0.0**
University of Oregon.....................	19	10	2	16.7	7	0	0.0
PENNSYLVANIA .... —2.0	**398**	**187**	**17**	**8.3**	**174**	**20**	**10.3**
Hahnemann Medical College and Hosp. ..	21	14	0	0.0	7	0	0.0
Jefferson Medical College................	167	68	4	5.7	88	7	7.4
Medico-Chirurgical Coll. of Philadelphia..	89	46	10	17.9	27	6	18.2
Temple University	23	16	3	15.8	2	2	50.0
University of Pennsylvania..............	62	25	0	0.0	36	1	2.7
University of Pittsburgh.................	14	11	0	0.0	3	0	0.0
Woman's Medical College of Pennsylvania	22	7	0	0.0	11	4	26.7
SOUTH CAROLINA .... —	**19**	**15**	**0**	**0.0**	**4**	**0**	**0.0**
Medical College of South Carolina.......	19	15	0	0.0	4	0	0.0
TENNESSEE .... +19.1	**371**	**113**	**19**	**14.4**	**159**	**80**	**33.5**
Lincoln Memorial University..............	15	10	0	0.0	4	1	20.0
Meharry Medical College..................	139	28	11	28.3	50	50	50.0
University of Tennessee..................	81	16	0	0.0	50	15	23.1
University of West Tennessee.............	27	5	8	61.5	5	9	64.3
Vanderbilt University	109	54	0	0.0	50	5	9.1
TEXAS .... —10.2	**71**	**53**	**6**	**10.2**	**12**	**0**	**0.0**
Baylor University	27	19	5	20.8	3	0	0.0
Fort Worth School of Medicine...........	7	4	1	20.0	2	0	0.0
University of Texas......................	37	30	0	0.0	7	0	0.0
VERMONT .... +14.3	**34**	**13**	**0**	**0.0**	**18**	**3**	**14.3**
University of Vermont....................	34	13	0	0.0	18	3	14.3
VIRGINIA .... +10.2	**142**	**81**	**3**	**3.6**	**50**	**8**	**13.8**
Medical College of Virginia..............	122	70	3	4.1	41	8	16.3
University of Virginia...................	20	11	0	0.0	9	0	0.0
WISCONSIN .... +12.5	**53**	**45**	**0**	**0.0**	**7**	**1**	**12.5**
Marquette University	53	45	0	0.0	7	1	12.5
Totals .... +7.0	**4115**	**2491**	**248**	**9.1**	**1155**	**221**	**16.1**

* These three colleges (in Georgia and Missouri) are reported as not recognized by the licensing boards in the home states.

In this table the graduates of each college who were examined in the state in which the *college is located are grouped in one* column, while graduates of that college examined in other states are in another column. For example, under Kentucky, this table shows that, of the 67 graduates of the University of Louisville Medical Department who were examined by state boards during 1916, 40 were examined in Kentucky, of which number 38 passed and 2, or 5.0 per cent., failed, while 27 were examined in *other states, of which* number 21 passed and 6, or 22.2 per cent., failed.

This table shows that in most instances the graduates have better chances of passing examinations *in the state in which* their colleges are located than they have elsewhere. This should always be considered in making comparisons between colleges. A low standard college by having all its graduates examined in the *home* state, or by a partisan board, may show a lower percentage of failures than a college of much higher grade which has graduates examined by several states.

The heavy-faced figures give the results by states. The first column of heavy-faced figures, preceded by the + and — signs, shows the differences between the percentages of examination in the home state and the examination elsewhere. The plus sign indicates that graduates have better chances of success in the state where the colleges from which they graduated are located; the minus sign indicates that the chances are better elsewhere. The most marked variations in 1916 were in the examination of the graduates of the colleges of Alabama, 94.1 per cent.; North Carolina, 62.5; Georgia, 26.1; Oklahoma, 25.6, and Nebraska, 23.1, in all of which the chances of the graduates were better in the home state. The marked variations where the graduates' chances were better elsewhere were in Connecticut and Oregon, each 16.7, and in Texas, 10.2 per cent.

The danger of forming hasty conclusions from these percentages taken alone, however, is very well shown by the figures for Alabama where 18 graduates of the University of Alabama School of Medicine were examined, and where the failure of the one examined in "other states" may have been accidental. *More reliable are the percentages in Tennessee*, Illinois, Pennsylvania, Kentucky and Missouri where larger numbers were examined both at home and in "other states." The totals show that, on the average, the chances of success were 6.0 per cent. better if the graduate took the examination in the state where his college was located.

over 300 each. Illinois furnished 794 graduates, the largest number, followed by New York with 595, Pennsylvania with 423 and Tennessee with 385. Of the thirty-three groups of colleges, nineteen had failure percentages of less than 10 per cent., nine had failure percentages between 10 and 20, and five had 20 per cent. or more of failures. Of all states, the highest failure percentage was obtained by the North Carolina group, 31.8, followed by the Tennessee group, with 28.1 per cent. Other deductions are given in the legend to the table.

Study of Larger Colleges

Table F is also based on the three large tables, and gives the results of state board examinations as they affect the thirty-three largest medical colleges. Although these colleges represent 37.1 per cent. of the medical colleges in the United States having graduates examined, they furnish 74.0 per cent. of all candidates for license coming from medical schools of the United States. This table shows, however, that the graduating of large classes by a medical college does not prove excellence of teaching, since four of the colleges having 100 or more examined have high failure percentages, and this holds true even for the graduates of 1916. In fact, the larger the college from the point of view of the number of students and graduates, the more serious is inferior teaching ability, as indicated by a high failure percentage. In fairness to medical students, and in the interests of the public, such schools should greatly strengthen their teaching facilities or reduce the size of their classes.

TABLE 4.—TOTAL RESULTS

Comparison with Previous Years

Year	Table A				B		C		A		I	
	Total Examined	Examined—Passed	Examined—Failed	Percentage Failed	Recent Grads. Examined	Percentage Failed	Older Prac. Examined	Percentage Failed	Nongrads. Examined	Percentage Failed	Registered without Written Examination	Total Registered
1904	7035	5672	1363	19.3	4773	14.1	579	29.7	515	52.6	999	6671
1905	7170	5680	1490	20.8	6054	16.2	690	37.7	472	61.9	394	6074
1906	8035	6368	1667	20.7	6250	16.4	793	27.1	703	51.3	1497	7865
1907	7271	5723	1548	21.3	5922	15.1	675	27.7	674	69.6	1426	7149
1908	7770	6084	1686	21.7	6477	17.8	796	31.5	494	56.8	1276	7360
1909	7287	5857	1430	19.6	5891	15.4	958	30.0	438	54.1	1373	7230
1910	7004	5712	1292	18.4	5678	14.9	973	29.1	353	45.6	1640	7352
1911	6960	5578	1382	19.9	5685	17.2	945	29.4	330	38.5	1246	6824
1912	6879	5466	1413	20.5	5770	18.6	856	29.2	253	34.8	1257	67 3
1913	6435	5236	1199	18.6	5390	16.5	225	32.1	251	37.8	1265	6501
1914	5570	4370	1200	21.6	4549	17.6	728	30.0	293	61.4	1427	5797
1915	5313	4486	827	15.6	4627	13.2	621	29.3	65	49.2	1386	5872
1916	4850	4123	727	15.0	4283	12.7	567	32.1	.....	......	1338	5461

Results in Home States and Elsewhere

Table G is of much interest, because it shows for each college the results of examinations in the state in which the college is located, as compared with the results of examinations in other states, where there is less probability of local influence. Of all recent graduates examined in 1916, coming from the eighty-nine medical colleges of the United States which had graduates examined, 2,739, or 61.8 per cent., took their license examinations in the states in which were located the colleges from which they graduated. Of this number, 9.1 per cent. failed on the average, whereas, of the 1,376 graduates examined in other states, 16.1 per cent. failed. This would indicate that, on the average, the student had 7 per cent. better chances of passing the license examination by taking it in the state in which the college is located. No graduates of the medical colleges in Georgia, Louisiana, Nebraska, Vermont and Wisconsin failed in the examinations given in those states, although of the graduates of those colleges who were examined in other states, respectively, 26.1, 11.1, 23.1, 14.3 and 12.5 per cent. failed. A glaring fact to the contrary, however, is that twenty-five graduates of two low grade medical colleges not recognized in Missouri were examined in adjoining states, and not one of them failed! The student's chances for success at home and elsewhere were equal, or nearly so, in the groups of colleges of the District of Columbia, Illinois, Massachusetts and Pennsylvania. The student's chances were unusually better in the home state in Alabama, Georgia, Kentucky, Louisiana, Michigan, Nebraska, North Carolina, Oklahoma, Tennessee, Vermont, Virginia and Wisconsin, while of the colleges in Connecticut, Oregon and Texas the graduate's chances were far better in "other states."

Total Results for Five Years

Table H shows the number registered and the number rejected in each state for each of the past five years. A

TABLE H.—PHYSICIANS EXAMINED BY STATE BOARDS, 1912 TO 1916, INCLUSIVE

STATE	1912		1913		1914		1915		1916		Totals			
	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Registered	Rejected	Examined	Registered	Rejected	Percentage Rejected
Alabama	84	72	90	57	115	60	79	45	55	36	693	423	270	39.0
Alaska	...	...	...	...	4	0	6	0	11	1	22	21	1	4.5
Arizona	32	10	26	9	26	16	10	7	33	9	178	127	51	28.7
Arkansas	124	27	91	28	97	16	75	7	67	11	543	454	89	16.4
California	256	60	163	36	113	45	137	39	146	8	1003	815	188	18 7
Colorado	41	1	53	5	31	1	19	5	25	8	189	169	20	10.6
[illegible]	[illegible]	16	77	51	46	8	46	17	41	20	394	280	114	28.9
		1	12	1	18	0	13	0	13	2	82	78	4	4.9
		7	55	5	47	12	51	13	33	14	286	237	51	17.8
		31	116	49	106	37	83	25	68	18	647	487	160	24.7
		17	171	24	170	21	176	17	133	7	923	837	86	9.3
Idaho	35	12	21	2	19	2	23	1	29	0	144	127	17	11.8
Illinois	305	134	567	98	484	110	439	64	517	91	3009	2512	497	16.5
Indiana	[illegible]	4	101	1	48	2	49	3	49	4	356	342	14	3.9
		7	107	4	77	1	85	4	82	2	500	482	18	3.6
		12	89	7	37	4	29	4	32	1	265	237	28	10.6
Kentucky	88	8	78	12	59	7	83	7	66	10	418	374	44	10.5
Louisiana	128	36	69	20	76	24	69	21	68	10	521	410	111	21.3
Maine	[illegible]	17	46	9	54	11	63	6	25	2	307	262	45	14.7
		46	108	40	105	27	111	29	96	30	752	580	172	22.9
		54	215	74	226	97	238	65	166	40	1402	1072	330	23.5
Michigan	159	3	99	3	138	2	120	6	135	5	670	651	19	2.8
Minnesota	55	5	71	4	47	3	59	6	56	1	307	288	19	6.2
Mississippi	56	48	61	19	51	17	84	15	48	29	428	300	128	29.9
Missouri	213	32	200	25	195	33	200	22	161	13	1094	969	125	11.4
Montana	50	9	57	16	58	25	48	16	38	14	331	251	80	24.2
Nebraska	88	10	87	2	66	6	70	0	52	0	387	363	24	6.2
Nevada	8	1	10	3	7	3	12	1	10	1	56	47	9	16.1
New Hampshire	36	7	17	3	36	6	6	1	10	0	122	105	17	13.9
New Jersey	59	14	69	7	41	13	71	8	72	10	364	312	52	14.3
New Mexico	6	2	6	1	8	2	5	0	5	1	36	30	6	16.7
New York	433	153	511	205	501	169	618	165	523	150	3437	2586	851	24.8
North Carolina	87	37	77	34	81	37	106	30	96	18	603	447	156	25.9
North Dakota	15	7	16	13	15	1	10	5	15	5	102	71	31	30.4
Ohio	199	12	189	3	146	18	149	3	182	5	906	865	41	4.7
Oklahoma	94	27	58	5	48	12	50	13	52	8	367	302	65	17.7
Oregon	96	65	112	36	76	42	56	30	38	17	568	378	190	33.4
Pennsylvania	356	170	345	59	101	22	208	24	233	33	1551	1243	308	19.9
Rhode Island	39	12	28	4	27	5	26	6	27	7	181	147	34	18 8
South Carolina	90	35	99	47	68	37	53	36	53	24	542	363	179	33.0
South Dakota	16	1	30	1	25	4	25	0	18	2	122	114	8	6.6
Tennessee	313	76	306	94	149	205	101	4	128	20	1396	997	399	28.6
Texas	151	13	168	11	152	11	136	11	90	13	756	697	59	7.8
Utah	[illegible]	2	24	3	13	3	21	1	15	0	102	93	9	8.8
		2	24	2	28	0	36	0	17	0	154	150	4	2.6
		30	87	19	98	10	100	8	99	8	564	489	75	13.8
		27	63	22	92	5	75	14	48	4	419	347	72	17.2
West Virginia	66	20	58	17	51	4	70	7	58	2	353	303	50	14.2
Wisconsin	68	19	98	8	81	4	74	10	72	4	438	393	45	10.3
Wyoming	11	0	10	1	4	0	13	0	17	0	56	55	1	1.8
Totals	6879		6434		5570		5313		4850		29046			
Registered	5466		5235		4370		4486		4123		23680			
Rejected	1413		1199		1200		827		727		5366			
Per Cent. Rejected	20.5		18.6		21.6		15.6		15.0		18.5			

This table gives the number of candidates registered and rejected on examination by each state during each of the last five years. The last four columns give the *totals* for the five years and the percentage rejected by each state.

Four states registered over 1,000 candidates by examination in the five years, these being New York, Illinois, Pennsylvania and Massachusetts. Over 2,000 were registered in only two states, New York with 2,586, and *Illinois* with 2,512. Altogether 23,680 physicians were registered by examination in *five years*, an average of 4,736 each year.

The seven highest percentages of rejections for the five years were in Alabama, 39.0; Oregon, 33.4; South Carolina, 33.0; *Mississippi*, 29.9; Connecticut, 28.9; *Arizona*, 28.7, and Tennessee, 28.6 per cent. Until 1916 Massachusetts, Oregon and Tennessee included nongraduates among those examined during the last five years, *and* for that reason would be expected to have higher percentages rejected. *On the* other hand, in several states the *boards* refused to recognize certain colleges and eliminated many candidates prior to the examination by a careful scrutiny of credentials and as a result the percentages of failures at the examinations are lower than otherwise would be the case. For example, Ohio rejected only 4.7 per cent. of *those* who took their examinations, but graduates of twenty medical colleges are not eligible for admission to the examinations.

Omitting Alaska, the lowest failure percentages were in Wyoming, 1.8; Vermont, 2.6; Michigan, 2.8; Iowa, 3.6; Indiana, 3.9, and Ohio, 4.7.

comparison of this table with the statistics in the last educational number of The Journal (Aug. 19, 1916, p. 598, Table 14) shows—what would be expected—that the states having the largest number of medical graduates examined the largest number of physicians. New York leads, having examined 3,437 candidates in five years, followed by Illinois with 3,009. The five states having the next highest numbers examined are Pennsylvania with 1,551, Massachusetts with 1;402, Tennessee with 1,396, Missouri with 1,094, and California with 1,003.

Total Registration in 1916

The tables thus far described have referred only to the results of examinations and to those registered on that basis. Table I, however, shows the total number who received licenses in each state, including those registered by examination, by reciprocity and under various exemption clauses. Altogether 5,461 physicians were registered by all methods during 1916, as compared with 5,876 in 1915, 5,797 in 1914, 6,501 in 1913, 6,723 in 1912, 6,824 in 1911 and 7,865 in 1906. There has been a constant decrease in the totals licensed by all methods until 1915, when there was an increase of 79. In 1916 the total registered was 411 less than in 1915. By reciprocity or under exemption clauses, 1,338 were licensed in 1916, as compared with 1,386 in 1915, 1,427 in 1914 and 1,265 in 1913. For the first years since the collection of these statistics was begun, no undergraduates were registered.

TABLE I.—REGISTRATION BY STATE BOARDS DURING THE YEAR 1916

STATES	By Examination			By Reciprocity	Without Written Examination or Under Exemption	Total Registered
	Graduates, 1912-1916	Graduates, 1911 and Previous	Nongraduates			
Alabama	53	2	....	....	....	55
Alaska	1	10	....	....	....	11
Arizona	16	17	....	....	....	33
Arkansas	58	9	....	28	....	95
California	136	10	....	156	....	302
Colorado	22	3	....	61	....	86
Connecticut	33	8	....	6	11	58
Delaware	13	....	....	6	....	19
District of Columbia	25	8	....	11	....	44
Florida	47	21	....	....	....	68
Georgia	130	3	....	19	....	152
Idaho	10	19	....	4	....	33
Illinois	498	19	....	39	....	556
Indiana	46	3	....	27	1	77
Iowa	65	17	....	21	....	103
Kansas	32	....	....	63	....	95
Kentucky	61	5	....	6	3	75
Louisiana	64	4	....	9	....	77
Maine	19	6	....	6	....	31
Maryland	94	2	....	24	....	120
Massachusetts	150	16	....	....	....	166
Michigan	133	2	....	89	....	224
Minnesota	51	5	....	45	....	101
Mississippi	43	5	....	10	....	58
Missouri	145	16	....	51	....	212
Montana	15	23	....	....	1	39
Nebraska	51	1	....	18	....	70
Nevada	3	7	....	19	....	29
New Hampshire	9	1	....	15	....	25
New Jersey	69	3	....	91	....	163
New Mexico	2	3	....	9	49	63
New York	499	24	....	21	1	545
North Carolina	95	1	....	17	....	113
North Dakota	12	3	....	20	....	35
Ohio	178	4	....	69	....	251
Oklahoma	45	7	....	55	....	107
Oregon	21	17	....	....	....	38
Pennsylvania	221	12	....	19	....	252
Rhode Island	21	6	....	....	....	27
South Carolina	50	3	....	....	....	53
South Dakota	11	7	....	....	....	18
Tennessee	122	6	....	14	....	142
Texas	82	8	....	75	1	166
Utah	14	1	....	8	....	23
Vermont	16	1	....	6	....	23
Virginia	94	5	....	32	....	131
Washington	32	16	....	....	....	48
West Virginia	55	3	....	32	....	90
Wisconsin	68	4	....	55	....	127
Wyoming	8	9	....	15	....	32
Totals	3738	385	....	1271	67	5461

This table shows the total number registered during 1916 in each state by the various methods. The first three columns show those registered by examination: the first column showing the recent graduates registered, the second column the old practitioners (graduates of 1911 and previous years), and the third column the nongraduates, of which none were licensed in 1916. The fourth column shows the number licensed through reciprocity, the fifth column shows those licensed under various exemption clauses in the practice acts, such as because of national fame or by recognition of diplomas (New Mexico).

It is interesting to note that as a rule states which registered large numbers through reciprocity, Michigan, Colorado and New Jersey for example, examined very few old practitioners. The large registration through reciprocity in California is due to the liberal provision in the recent medical practice act providing for the recognition of licenses granted in other states. There were no reciprocal registrations in eleven states, including Alaska.

The last column shows the total number of physicians registered by all methods in each state during the year. Only three states registered over 300 each, these being Illinois, 556; New York. 545, and California, 302. Seventeen states registered less than 50 each. The largest registration was 556 in Illinois and the smallest was 11 in Alaska. The total was 5,461, a decrease of 411 below the total registered in 1915.

Over 100 were registered by all methods in nineteen states, over 200 in seven, and over 300 in three, the largest numbers registered being 556 in Illinois, 545 in New York and 302 in California. Of those licensed in California, 156, or 51.6 per cent., were registered by the endorsement of licenses granted by the boards of other states.

Table J gives those registered without examination on presentation of satisfactory credentials, which included a license issued by some other state. This is commonly referred to as "reciprocity," which conveys the idea that the state which accepts the license of another must be granted the same courtesy by the state issuing the original license. The term does not always apply, however, since some state boards—California, Colorado, New Hampshire and New Jersey, as examples—accept the physician's credentials, if satisfactory, whether or not the state board issuing the original license returns the favor. Had not reciprocal relations been established by the thirty-nine states shown in Table J, 1,271 physicians, many of whom have been in practice for ten or more years, would have been compelled to undergo the ordeal of a second trying examination.

Table K shows in what states were granted the original licenses of those who were registered elsewhere under the reciprocity provision during the last five years. It should be noted that of the 6,304 physicians licensed through reciprocity during the last five years, the largest number coming from any one state was 937, who obtained their original licenses in Illinois. Although Illinois and New York have about an equal number of medical college graduates each year,[1] only 374 physicians obtained original licenses in New York and registered elsewhere through reciprocity in the last five years. This is doubtless because Illinois has reciprocal relations with twenty other states, while New York has established such relations with only seven.

Reciprocity and Educational Standards

As usually administered, reciprocal relations tend to lower rather than to elevate educational standards, and this is particularly true in some states. A study of these statistics will show that, in several instances, such relations exist between states differing widely in their standards of education and in the methods and severity of their examinations. In a few states there is an inclination to accept graduates from medical colleges at home and abroad without first securing definite information regarding the character of those colleges. There are some boards, however, which wisely reserve and exercise the right to reject any candidate who does not possess satisfactory credentials, even though he is licensed in a state with which it has reciprocal relations. Some boards also prudently require that the applicant, before he is eligible to registration through reciprocity, must have been engaged in the actual and reputable practice of his profession for at least a year in the state in which the original license was granted. Without this provision a candidate would be tempted to obtain his original license in the state giving the easiest examination. Without the one-year clause, therefore, standards of examination are liable to be lowered, especially by such boards as retain the fees obtained from those examined.

Again, some states refuse to register by reciprocity any candidates who have failed to pass their own examination; but this rule is not generally observed. In the establishing of reciprocal relations, therefore, the state board should

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[1] See Table 14, The Journal A. M. A., Aug. 19, 1916, p. 598.

TABLE J.—PHYSICIANS REGISTERED THROUGH RECIPROCITY BY STATE EXAMINING BOARDS DURING 1916

Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
STATE BOARDS OF	Total Reg. by Recip., Ex. State	Alabama	Arizona	Arkansas	California	Colorado	Connecticut	Delaware	Dist. Columbia	Florida	Georgia	Idaho	Illinois	Indiana	Iowa	Kansas	Kentucky	Louisiana	Maine	Maryland	Massachusetts	Michigan	Minnesota	Mississippi	Missouri	Montana	Nebraska	Nevada	New Hampshire	New Jersey	New Mexico	New York	North Carolina	North Dakota	Ohio	Oklahoma	Oregon	Pennsylvania	Rhode Island	South Carolina	South Dakota	Tennessee	Texas	Utah	Vermont	Virginia	Washington	West Virginia	Wisconsin	Wyoming	U. S. Navy	Alaska, Hawaii, etc.	Foreign
Arkansas	28	..	..	..	..	..	..	..	..	..	2	..	1	..	..	..	..	4	..	..	..	1	..	7	..	..	..	1	..	..	..	..	..	..	..	3	..	..	..	..	..	6	1			2							
California	156	..	5	1	..	4	1	..	..	1	2	2	28	5	6	3	2	..	..	4	4	6	2	..	12	1	3	3	1	2	..	9	1	..	12	..	1	11	1	..	2	..	2										
Colorado	61	1	..	..	1	..	..	1	..	..	1	..	10	1	5	2	..	2	..	..	1	1	2	1	8	..	2	..	..	..	..	4	1	..	1	1	1	7	..	..	1	3	..										
Connecticut	6	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Delaware	6	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dist. of Columbia	11	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..
Georgia	19	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	3	..	..	..	..	2	..	..	..	..	..	..	..	5	..	..	..	..	1	..	..	..	5	..	..	..	1	..	..	..	..	..	..	..
Idaho	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..	..
Illinois	39	..	..	1	..	..	..	..	..	..	..	..	..	4	..	1	6	1	..	1	..	4	..	..	10	..	2	..	..	..	..	..	..	2	3	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	1	..	..
Indiana	27	..	..	..	..	..	..	..	..	..	..	..	14	..	..	..	3	..	..	..	..	1	..	..	..	..	1	..	..	..	..	1	..	..	4	..	..	1	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..
Iowa	21	..	..	..	..	..	..	..	..	..	1	..	..	..	..	3	1	..	..	..	..	..	3	..	7	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..
Kansas	63	..	..	15	..	..	..	..	..	..	1	..	5	..	1	..	6	..	..	..	..	..	..	..	21	..	2	..	..	1	..	..	..	..	1	4	..	1	..	1	..	2	..	..	..	1	..	..	1	..	..	..	..
Kentucky	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	2	..	..	..	..	..	..	..	1	..	..	..	..	..
Louisiana	9	..	..	2	1	..	..	..	..	..	3	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maine	6	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..	..
Maryland	24	..	..	..	..	..	..	1	4	..	1	..	1	..	..	..	..	..																											1	1	..	3	1	..	..	..	..
Michigan	89	1	..	2	..	1	..	1	..	..	..	1	27	1	2	..	2	1																											1	2	..	3	6	..	..	..	..
Minnesota	45	..	..	..	..	..	..	..	1	..	..	..	19	1	7	..	..	..	..																								1	..	..	1	..	..	8	..	..	..	..
Mississippi	10	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	2	..	..	..	..	..	1	..	..	..	..
Missouri	51	..	..	..	..	1	..	..	..	..	1	..	13	3	3	11	1	..	..	1	..	2	..	..	..	..	3	..	..	..	..	..	..	..	2	1	..	1	..	..	..	7	..	..	..	..	..	1	..	..	..	..	..
Nebraska	18	..	..	..	..	..	..	..	..	..	..	..	5	..	6	1	..	..	..	..	..	..	..	1	2	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..
Nevada	19	..	..	..	..	..	..	..	..	..	..	..	4	2	..	..	..	..	..	..	..	..	..	..	1	..	4	..	..	..	..	..	..	..	..	1	..	3	..	..	..	..	..	3	..	..	..	..	1	..	..	..	..
New Hampshire	15	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	12	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..
New Jersey	91	1	..	..	..	..	..	1	3	..	..	..	..	..	..	..	1	..	6	1	3	..	..	..	..	..	..	..	3	..	..	52	1	..	..	..	..	11	..	..	..	1	1	..	3	3	..	..	..	..	..	..	..
New Mexico	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
New York	21	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	8	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	6	..	..	..	..	..	..	..
North Carolina	17	..	..	..	..	..	..	..	1	..	3	..	..	1	..	..	1	1	..	1	..	1	..	..	..	..	..	..	..	..	..	2	..	..	..	..	..	2	..	..	..	..	..	..	..	4	..	..	..	..	..	..	..
North Dakota	20	..	..	..	..	..	..	..	..	..	1	..	7	3	..	..	..	1	..	..	..	..	7	..	1	..	..	..	..	..	..	..	..	..	..	..																	
Ohio	69	..	..	..	..	..	..	..	1	..	..	..	9	3	1	..	1	..	3	9	..	11	1	..	4	..	..	..	..	1	..	9	..	..	..	..																	
Oklahoma	55	..	..	14	..	..	..	..	..	..	2	..	..	..	..	2	5	..	..	..	..	1	..	4	3	..	2	..	..	1	2	..	..	..	..	..																	
Pennsylvania	19	..	..	..	..	..	..	2	2	..	..	..	..	..	..	1	..	..	..	2	..	..	..	..	2	..	..	..	1	1	..	..	..	..	5	..	..	..	..	..	..	..	..	..	..	..	..	3	..	..	..	..	..
Tennessee	14	..	..	5	..	..	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	1	..	2	..	..	..	..	..	..	..
Texas	75	..	..	14	..	1	..	..	1	..	4	..	..	1	..	3	2	1	..	2	..	1	..	4	6	..	1	..	..	..	..	..	..	..	2	9	..	2	..	..	..	13	..	..	2	..	..	1	..	..	..	..	5
Utah	8	..	..	..	..	1	..	..	2	..	..	1	1	..	..	..	..	1	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Vermont	6	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Virginia	32	1	..	..	..	..	..	..	3	..	2	..	1	..	..	..	2	1	..	3	..	..	..	..	..	..	..	..	..	..	..	..	8	..	..	..	..	3	..	1	..	1	..	..	..	..	..	5	..	..	..	..	1
West Virginia	32	..	..	..	..	..	..	..	..	1	1	..	..	..	..	..	5	..	..	3	..	..	..	1	..	..	..	..	..	..	..	..	..	..	3	..	..	4	..	1	..	3	..	..	..	10	..	..	..	..	..	..	..
Wisconsin	55	..	..	2	..	..	..	..	..	..	1	1	25	1	..	2	2	1	..	1	..	2	4	..	4	..	1	..	..	..	..	2	..	1	2	..	..	..	..	..	..	3	..	..	..	..	..	..	..	..	..	..	..
Wyoming	15	..	..	..	..	..	..	..	..	..	..	..	7	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	4	..	..	..	..	1	..	..	..	..
Totals	1271	4	5	56	2	8	1	8	20	2	30	5	178	27	32	33	40	16	13	45	22	34	19	18	93	1	28	7	11	17	2	84	17	4	51	26	2	74	1	7	3	65	15	16	15	36	12	25	32	1	1	1	6
Number	....	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52

This table shows the number of physicians registered by each state through reciprocity during 1916. Reading from left to right, it shows the total number of physicians registered through reciprocity in the state named and the numbers of such candidates coming *from* the states named at the top of the various columns. Reading from above downward, the figures show the number of physicians who left the state named at the head of the column and went *to each of the states* named in the corresponding lines, and at the bottom, the total number of candidates leaving the state to go elsewhere. For example, reading from left to right, the table shows that *Mississippi registered* ten candidates through reciprocity in 1916 and that, of these candidates, 3 came from Tennessee, 2 each from Missouri and Texas, and 1 each from Georgia, Kansas and Wisconsin. Reading from above downward, the table shows that from Mississippi 7 candidates went to Arkansas, 4 each to Oklahoma and Texas, and 1 each to Colorado, Nebraska and West Virginia, the total leaving the state to go elsewhere being 18. The line at the bottom shows in wha[illegible] [illegible]o were registered through reciprocity obtained the [illegible] candidates obtained their origina[illegible] From Illinois 178 [illegible] Missouri with 93, New York with 84, Pennsylvania [illegible] with 65.

TABLE K.—RECIPROCAL REGISTRATION IN FIVE YEARS (SHOWING WHAT STATES ISSUED ORIGINAL LICENSES)

STATE	Physicians Going from States Named During					Totals
	1912	1913	1914	1915	1916	
Alabama	1	2	1	1	4	9
Arizona	....	3	13	6	5	27
	15	37	20	37	56	165
	....	....	2	3	2	7
	9	12	25	15	8	69
	1	2	1	3	1	8
	15	8	2	6	8	39
	18	17	22	18	20	95
	1	1	2	4	2	10
Georgia	13	26	17	22	30	108
Idaho	5	....	5	1	5	16
Illinois	193	171	197	198	178	937
Indiana	40	33	44	43	27	187
Iowa	58	36	52	46	32	224
Kansas	27	32	42	39	33	173
Kentucky	36	43	35	48	40	202
Louisiana	10	13	10	16	16	65
Maine	23	9	11	12	13	68
	48	42	44	38	45	217
	2	2	7	19	22	52
	59	66	58	42	34	259
	29	29	23	34	19	134
	5	15	10	10	18	58
	67	61	98	104	93	423
Montana	1	....	3	1	1	6
Nebraska	29	34	37	50	28	178
Nevada	3	4	8	9	7	31
New Hampshire	1	7	3	4	11	26
New Jersey	18	10	19	22	17	86
New Mexico	4	8	9	5	2	28
New York	46	70	101	73	84	374
North Carolina	12	14	7	13	17	63
North Dakota	12	6	5	6	4	33
Ohio	39	50	71	47	51	258
Oklahoma	28	74	22	28	26	178
Oregon	....	3	3	2	2	10
Pennsylvania	57	86	86	79	74	382
Rhode Island	....	....	1	2	1	4
South Carolina	5	3	2	12	7	29
South Dakota	1	10	4	7	3	25
Tennessee	51	39	42	34	65	231
Texas	24	19	23	12	15	93
Utah	3	12	8	6	16	45
Vermont	30	11	21	25	15	102
Virginia	25	26	40	30	36	157
Washington	3	2	15	10	12	42
West Virginia	29	41	33	36	25	164
Wisconsin	35	28	41	29	32	165
	4	4	3	5	1	17
	1	1	2	....	1	5
U. S. Army	2	1	2	1	....	6
U. S. Navy	....	....	....	....	1	1
U. S. P. H. Service	....	....	....	....	....	....
Canada	....	....	1	....	1	2
Foreign and Misc.	3	....	2	1	5	11
Totals	1141	1223	1355	1314	1271	6304

This table shows that 6,304 candidates were registered through reciprocity during the last five years. Registration by reciprocity gradually increased from 1905 to 1914, since which time there has been a gradual decrease as the total of physicians licensed by other methods has decreased. A study of the totals for the different states shows that of the 6,304 registered during the five years 937, or 14.9 per cent., obtained their original licenses in Illinois. This is more than twice the number coming from any other state. The states furnishing the next highest numbers are Missouri, 423; Pennsylvania, 382, and New York, 374. New York might lead Illinois but reciprocal relations have been established with only seven other states.

Nine states (Alabama, Arizona, Connecticut, Florida, Massachusetts, Montana, Oregon, Rhode Island, and Washington) do not have reciprocal relations and would not appear in this table except for the fact that some states, like California, Colorado, New Hampshire and New Jersey, will accept a physician's credentials if satisfactory, whether the state issuing the original license returns the favor or not.

TABLE L.—STATE REQUIREMENTS OF HIGHER PRELIMINARY EDUCATION

There are now thirty-six states which have adopted requirements of preliminary education in addition to a standard four-year high school education. These states, the number of college years required and the time the higher requirement becomes effective are as follows:

State Examining Board of	Number of Years Required	Affects Students Matriculating	Affects All Graduates
Requiring Two Years:			
Alabama	2	1915-16	1919
Arizona	2	1918-19	1922
Colorado	2	1910-11	1914
Indiana	2	1911-12	1915
Iowa	2	1911-12	1915
Kansas	2	1918-19	1922
Louisiana	2	1918-19	1922
Maryland	2	1918-19	1922
Minnesota	2	1908 09	1912
Montana	2	1918-19	1922
New Hampshire	2	1915-16	1919
New Jersey	2	1917-18	1921
New Mexico	2	1918-19	1922
North Dakota	2	1908-09	1912
Oklahoma	2	1917-18	1921
Rhode Island	2	1918-19	1922
South Carolina	2	1918-19	1922
South Dakota	2	1911-12	1915
Virginia	2	1917-18	1921
Washington	2	1918-19	1922
Wisconsin	2	1915-16	1919
Requiring One Year:			
Arkansas	1	1915-16	1919
California	1	1915-16	1919
Connecticut	1	1910-11	1914
Illinois	1	1915-16	1919
Indiana*	1	1910-11	1914
Kansas*	1	1910-11	1914
Kentucky	1	1914-15	1918
Louisiana*	1	1915-16	1919
Maryland*	1	1914-15	1918
Michigan	1	1914-15	1918
Mississippi	1	1915-16	1919
New Hampshire*	1	1914-15	1918
New Jersey*	1	1916-17	1920
New York	1	1917-18	1921
North Carolina	1	1914-15	1918
Oklahoma*	1	1914-15	1918
Pennsylvania	1	1914-15	1918
Rhode Island*	1	1915-16	1919
Tennessee	1	1914-15	1918
Texas	1	1913-14	1917
Utah	1	1913-14	1917
Vermont	1	1914-15	1918
Virginia*	1	1914-15	1918
Washington*	1	1914-15	1918
West Virginia	1	1917-18	1921

* The 2-year requirement became or becomes effective at a later date.

TABLE M.—ADVANCES IN STATE LICENSE REQUIREMENTS IN TEN YEARS

Requirement or provision	States having provision for			States still having no provision for
	1904	1917	Increase	
Preliminary Education—				
Any requirement	20	46	26	3[1]
A standard four-year high school education or higher	10	44	34	5[2]
One year or more of college work	0	36	36	13
Two years of college work as a minimum	0	21	21	28
That all applicants be graduates of a medical college	36	49	13	0
That all applicants undergo an examination for license	45	48	3	1[3]
Requirement of practical tests in the license examinations	1	16	15	33
Hospital intern year required	0	6	6	43
Full authority by board to refuse recognition to low-grade colleges	14	42	28	7[4]
Boards refusing to recognize low-grade colleges*	5	39	34	10[5]
Reciprocal relations with other states	27	40	13	9[6]
Single boards of medical examiners	36	42	6	7[7]

* In three states, Arkansas, Connecticut and Florida, each of which has three separate boards, only the regular (nonsectarian) boards have refused recognition to low standard medical colleges.

1. District of Columbia, Massachusetts and Wyoming.
2. Idaho, Oregon and the states named in Footnote 1.
3. New Mexico.
4. District of Columbia, Idaho, Massachusetts, Nebraska, Oregon, Utah and Wyoming.
5. California, Nevada, Tennessee and the states named in Footnote 4.
6. Alabama, Arizona, Connecticut, Florida, Massachusetts, Montana, Oregon, Rhode Island and Washington. To this list should be added the outlying territories of Alaska, Canal Zone, Philippine Islands and Porto Rico, which have no provision for reciprocity.
7. Multiple boards still remain in Arkansas, Connecticut, Delaware, District of Columbia, Florida, Louisiana and Maryland.

reserve and exercise the discretionary power *to refuse to register any candidate who could not originally have registered in that state,* and should require that the applicant shall have been in actual practice of medicine for at least a year before he is eligible to registration under the reciprocity provision.

IMPROVED STANDARDS OF LICENSURE

Table L shows the states which have adopted one or two years of college work as a minimum standard of preliminary education for those who seek the license to practice medicine in those states. The first column shows the number of years of premedical college work required by each state; the second column shows the session in which students matriculating in medical colleges are affected by the increased requirement, and the third column gives the year in and after which all graduates are affected by the increased requirement. This table shows the remarkable progress which has been made

TABLE N.—ESSENTIAL FEATURES OF STATE LAWS AND CONDITIONS SURROUNDING MEDICAL LICENSURE

STATE	Graduation Required	Preliminary Education			Medical Education				Reciprocity			Single Examining Board	Examination Fee
		Law Provides For	Years in High School Required	Years in a College of Arts[3]	Required Years of Medical Study	Minimum Hours per Week	Minimum Weeks per Year	Intern Year Required	Has Reciprocity with Other States	One or More Years of Practice Required	Reciprocal Fee		
Alabama	....	Yes	4	2	4	....	....	....	No	....	....	....	$10
Alaska	....	Yes	4	....	4	....	....	....	Yes	....	$25	....	25
Arizona	....	Yes	4	2	4	....	....	....	No	....	....	....	25
Arkansas	....	Yes	4	1	4	....	....	....	Yes	[4]	50	No	15
California	....	Yes	4	1	4	....	32	....	Yes	Yes	50	....	25
Canal Zone	....	....	....	....	....	....	....	....	No	....	....	....	5
Colorado	No	Yes	4	2	4	....	....	....	Yes	....	25	....	25
Connecticut	....	Yes	4	1	4	36	26	....	No	....	15	No	15
Delaware	....	Yes	4	....	4	....	....	....	Yes	Yes	50	No	10
Dist. of Col.	....	....	....	....	4	....	....	....	Yes	Yes	10	No	10
Florida	....	Yes	4	....	4	....	....	....	No	....	....	No	15
Georgia	....	Yes	4	....	4	40	32	....	Yes	No	50	....	20
Hawaii	....	....	....	....	4	....	....	....	No	....	....	....	10
Idaho	....	Yes	....	....	....	....	....	....	Yes	Yes	25[2]	....	25
Illinois	....	Yes	4	1	4	....	32	Yes	Yes	Yes	10[2]	....	10
Indiana	....	Yes	4	2	4	30	30	....	Yes	Yes	50	....	25
Iowa	....	Yes	4	2	4	....	26	....	Yes	Yes	50	....	10
Kansas	....	Yes	4	2	4	....	....	....	Yes	....	15[2]	....	15
Kentucky	....	Yes	4	1	4	....	32	....	Yes	Yes	10	....	10
Louisiana	....	Yes	4	2	4	....	....	....	Yes	Yes	50	No	25
Maine	....	Yes	4	....	4	....	....	....	Yes	No	15	....	15
Maryland	....	Yes	4	2	4	....	....	....	Yes	Yes	25	No	15
Massachusetts	....	....	....	....	....	....	....	....	No	....	....	....	20
Michigan	....	Yes	4	1	4	36	34½	Yes	Yes	No	50	....	25
Minnesota	....	Yes	4	2	4	....	26	....	Yes	No	50	....	10
Mississippi	....	Yes	4	1	4	....	....	....	Yes	Yes	50	....	10
Missouri	....	Yes	4	....	4	....	....	....	Yes	Yes	25	....	15
Montana	....	Yes	4	2	4	....	....	....	No	....	....	....	25
Nebraska	....	Yes	4	....	4	....	....	....	Yes	Yes	25	....	25
Nevada	....	Yes	4	....	4	....	....	....	Yes	Yes	25	....	25
New Hampshire	....	Yes	4	2	4	....	....	....	Yes	Yes	20	....	20
New Jersey	....	Yes	4	2	4	....	....	Yes	Yes	No	50	....	25
New Mexico	[1]	Yes	4	2	4	30	30	....	Yes	Yes	25	....	25
New York	....	Yes	4	1	4	....	....	....	Yes	Yes	25	....	25
North Carolina	....	Yes	4	1	4	....	....	....	Yes	Yes	50	....	15
North Dakota	....	Yes	4	2	4	30	30	Yes	Yes	Yes	25	....	25
Ohio	....	Yes	4	....	4	....	30	....	Yes	Yes	50	....	25
Oklahoma	....	Yes	4	2	4	....	....	....	Yes	Yes	25	....	15
Oregon	....	Yes	4	....	4	....	....	....	No	....	....	....	10
Pennsylvania	....	Yes	4	1	4	35	32	Yes	Yes	Yes	50	....	25
Philippine Is.	....	Yes	....	....	....	....	....	....	No	....	....	....	25
Porto Rico	....	....	....	....	....	....	....	....	No	....	....	....	20
Rhode Island	....	Yes	4	2	4	....	....	Yes	No	....	....	....	20
South Carolina	....	Yes	4	2	4	....	26	....	Yes	Yes	10	....	10
South Dakota	....	Yes	4	2	4	....	26	....	Yes	Yes	20	....	20
Tennessee	....	Yes	4	1	4	....	....	....	Yes	Yes	10	....	10
Texas	....	Yes	4	1	4	....	....	....	Yes	Yes	50	....	25
Utah	....	Yes	4	1	4	....	....	....	Yes	Yes	75	....	25
Vermont	....	Yes	4	1	4	....	....	....	Yes	No	50	....	20
Virginia	....	Yes	4	2	4	....	....	....	Yes	Yes[5]	50	....	25
Washington	....	Yes	4	2	4	....	32	....	No	....	....	....	25
West Virginia	....	Yes	4	1	....	....	....	....	Yes	Yes	25	....	10
Wisconsin	....	Yes	4	2	4	....	....	....	Yes	Yes	50	....	25
Wyoming	....	....	....	....	....	....	....	....	Yes	No	25	....	25

1. Will accept a diploma without examination if from a recognized college.
2. Reciprocal fee same as charged by the state from which applicant comes.
3. Or its equivalent in the medical college.
4. In some instances.
5. Or two years hospital experience.

in state board requirements since 1908, prior to which no state was requiring more than a four-year high school education as the minimum standard of preliminary education. As will be noted, there are now thirty-six states which have adopted the higher standard, twenty-one of which require as a minimum *two years* of premedical college work. It is understood that in every instance the one or two years of collegiate work must have included courses in physics, chemistry and biology.

In Table M the advance in standards of licensure is shown for all states since 1904. The most marked increase is in regard to the requirement of collegiate work in thirty-six states as referred to in Table L. The next greatest increase (thirty-four) is in the number of states—now thirty-nine—which are refusing to recognize low-grade medical colleges. Although, as shown in the third column, marked improvements have been made in state requirements for licensure, nevertheless, as indicated by the last column, there is abundant room for further improvement. The greatest needs are for a wider adoption of the standard of two years of premedical college work, the requirement of the hospital intern year, and a more general and larger use of practical tests in the examinations.

Table N shows the essential features of the various state license laws. It will be noted that only one state—Colorado—now admits nongraduates to the license examination, although only four nongraduates have been licensed in that state in ten years. There are seven states in which there are two or three separate boards having in charge the licensing of physicians and surgeons. In five of these states, namely, Arkansas, Connecticut, Florida, Louisiana and Maryland, the boards are entirely independent of each other with varying degrees of inefficiency naturally resulting from such a division of authority. In two states, Delaware and the District of Columbia, there is a central board or authority under which the separate boards act.

In Conclusion

In the gathering and publication of these statistics the endeavor has been to give a fair presentation of facts, a knowledge of which is always beneficial. This annual presentation of the results of state license examinations has had a powerful influence on medical education and medical licensure in this country. We reiterate our acknowledgments to the state licensing boards for their ready cooperation and the complete reports which have been furnished. For the verification of all figures the reports and data furnished by medical colleges have been of much value. We have no doubt that the information here published will be of service not only to the medical colleges and to the state boards, but also to the public, since the end-result is better qualified physicians.

SCHOLARSHIPS IN MEDICAL SCHOOLS

As a further evidence that ample provision is being made for all worthy students, regardless of their financial status, during the last several years 336 scholarships have been established in 43 medical schools as shown in the following table:

Scholarships in Medical Schools

University of Alabama School of Medicine	66
Leland Stanford Junior University School of Medicine	3
University of California Medical School	3
University of Colorado School of Medicine *	1
Yale University School of Medicine	2
Georgetown University School of Medicine	3
Atlanta Medical College	12
Hahnemann Medical College and Hospital of Chicago *	6
Northwestern University Medical School	9
Rush Medical College, Chicago	6
University of Illinois College of Medicine *	6
Indiana University School of Medicine	10
Bowdoin Medical School	1
Johns Hopkins University Medical Department	6
University of Maryland School of Medicine	6
Boston University School of Medicine *	20
Medical School of Harvard University, Boston *	27
Detroit College of Medicine and Surgery	6
University of Minnesota Medical School *	1
University of Missouri School of Medicine	1
Washington University Medical School	1
Dartmouth Medical School	2
Columbia University College of Physicians and Surgeons	64
New York Medical College and Hospital for Women	2
Syracuse University College of Medicine	1
University and Bellevue Hospital Medical College	1
University of Buffalo Department of Medicine	1
University of North Carolina School of Medicine	1
University of Cincinnati College of Medicine	12
Western Reserve University School of Medicine	1
University of Oregon Department of Medicine	3
Hahnemann Medical College and Hospital of Philadelphia	3
Jefferson Medical College	1
University of Pennsylvania School of Medicine*†	3
University of Pittsburgh School of Medicine	2
Woman's Medical College of Pennsylvania	8
Medical College of the State of South Carolina	8
University of Tennessee College of Medicine	1
Vanderbilt University Medical Department	4
University of Texas Department of Medicine *	1
University of Vermont College of Medicine	9
Medical College of Virginia	10
University of Virginia Department of Medicine	2
Total in 43 medical schools	336

* Have loan funds also.

† Has fifty or more scholarships for graduates of Philadelphia high schools.

Loan Funds

The colleges above which are marked by an asterisk (*) also have loan funds for deserving but needy students. Such funds are available also at other medical schools, as follows:

Yale University School of Medicine, New Haven, Conn.
George Washington University Medical School, Washington, D. C.
Howard University School of Medicine, Washington, D. C.
University of Georgia Medical Department, Augusta, Ga.
Tulane University of Louisiana School of Medicine, New Orleans.
University of Nebraska College of Medicine, Omaha.
University of North Dakota School of Medicine, University, N. D.
University of Wisconsin Medical School, Madison, Wis.

The schools marked with an asterisk have also established loan funds for the assistance of worthy students who are without ample money to pay for their tuition and keep. Even under the higher entrance standard there are abundant opportunities for the poor boy, since the opportunities for working one's way through liberal arts colleges have never been more abundant than at the present time. Even though it is difficult for students to work their way through the medical school on account of the severity of the curriculum, nevertheless, in some of our best university medical schools, many students are paying all or part of their expenses as they go along.

MEDICAL STUDENTS IN GREAT BRITAIN

We have received from the General Medical Council the following tabular statement showing the number of students in actual attendance on courses of instruction in preparation for medical degrees or diplomas:

Topical Distribution	First Year Qualifying in 1921			Second Year Qualifying in 1920			Third Year Qualifying in 1919			Fourth Year Qualifying in 1918			Fifth Year Qualifying in 1917		
	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total	Men	Women	Total
January, 1917															
London (only)	217	174	391	183	133	316	71	54	125	229	44	273	425	51	476
England	602	325	927	374	210	584	175	99	274	341	68	400	539	78	617
Scotland	363	239	605	235	184	419	180	131	311	314	74	388	359	71	430
Ireland	481	110	591	378	78	456	217	31	248	196	22	218	190	15	205
Total	1449	674	2123	987	472	1459	572	261	833	851	64	1015	1088	164	1252
May, 1916															
London (only)	251	122	373	145	68	213	43	44	87	479	39	518	269	38	307
England	558	226	784	280	109	389	140	65	205	619	71	690	375	55	430
Scotland	404	311	715	267	154	421	213	80	293	258	55	313	366	74	440
Ireland	460	99	559	236	32	268	166	18	184	201	19	220	181	11	192
Total	1422	636	2058	783	295	1078	519	163	682	1078	145	1223	922	140	1062

The total number of students in attendance in May, 1916, was 6,103. The total number of students in attendance in January, 1917, was 6,682.—*Lancet*, London, March 3, 1917.

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SATURDAY, APRIL 14, 1917

THE BACTERIOLOGY OF POLIOMYELITIS

An interesting contention has arisen regarding the organism of poliomyelitis. In 1913, Flexner and Noguchi reported the finding of a micro-organism which they described under the term "globoid bodies" and which they stated seemed to bear an etiologic relationship to the disease.[1] Previous to their studies, numerous investigators had attempted to find a specific organism, but without success. More recently, in connection with the epidemic of 1916, Mathers, Nuzum and Herzog, and Rosenow, Towne and Wheeler[2] described an organism or organisms of a coccal nature and submitted evidence to show an etiologic relationship to poliomyelitis. What seemed like pure culture of such coccus was obtained by these workers from the brain and cord of something like twenty cases of acute poliomyelitis. The publication of this work apparently prompted Amoss[3] of the Rockefeller Institute to extend that on the globoid bodies. These bodies are obtained in cultures with great difficulty; as Amoss says, "Only those who have employed the original methods of cultivation have been rewarded with successful results." He qualifies this even further, saying:

> This is significant in respect to the etiology of poliomyelitis, for, while a variety of ordinary bacteria easily cultivatable have been obtained by various workers, the globoid bodies represent a peculiar species and thus far alone have sufficed to produce typical poliomyelitis in monkeys by intracerebral inoculation.

He points out, moreover, that the globoid bodies have been made to fulfil Koch's law. Amoss then discusses his recent studies of two additional cultures of these bodies obtained from the nervous tissues of monkeys in which experimental poliomyelitis was produced. He finds that the globoid bodies are refractory to artificial cultivation, but, after long cultivation outside the body, they acquire saprophytic properties, and then grow readily in a variety of mediums. Antibodies to the injections of cultures of the globoid bodies were only slightly produced in rabbits, and only occasionally produced in the monkey, when the cultures were injected into the central nervous system. The response was small and led to slight reactions of agglutination and complement deviation with the cultures. The serum of human beings gave no complement deviation with the antigen derived from the globoid bodies when the serum was taken in the acute or early stages of poliomyelitis. These bodies apparently present many analogies in cultural, immunologic and pathogenic properties to the *Spirochaeta pallida*. It should be pointed out here that the coccus which has been mentioned, when grown in the mediums in which the globoid bodies are grown, assumes globoid forms; like the infectious material in poliomyelitic virus it is filterable and resists the action of glycerin.

Amoss' work is supplemented by that of Bull,[4] another worker in the Rockefeller Institute. Bull insists that the organism reported by Mathers, Rosenow, Towne and Wheeler, and by Nuzum and Herzog[2] is a streptococcus. He points out that the findings of these authors conflict in several points with those of previous investigators in this country and abroad, all of which tend to exclude bacteria as the inciting agents of epidemic poliomyelitis. Bull says, "The stricter the conditions of bacteriologic asepsis, the less frequently were the cultures obtained."

The only other exception, Bull says, to the work of former investigators, besides the work of the authors just mentioned, is the "globoid bodies" which were found under strictly anaërobic conditions by Flexner and Noguchi.[5] He insists that the descriptions and pictures of lesions occurring in rabbits and monkeys succumbing to injections with the cocci isolated from cases of poliomyelitis in the published reports of Mathers, Nuzum and Herzog, and Rosenow, Towne and Wheeler, which they identify with the typical lesions present in poliomyelitis in the central nervous tissue of man and the monkey, are not convincing. The descriptions given by these authors, he believes, are more convincing than the pictures. Their organism produces lesions which he thinks are of another order from those occurring in human poliomyelitis or in monkeys inoculated with the filterable virus. He therefore studied cultures of streptococci from the tonsils in cases of poliomyelitis and from tonsils in nonpoliomyelitic cases. Studies were made on animals, and the author states that he was not able to show any etiologic relationship between streptococci and epidemic poliomyelitis. The streptococci, on the other hand, all produced lesions in the rabbit which are not referable to poliomyelitis, but to streptococcus infection. It is difficult to analyze the article by Bull in detail since he considers the work of the investigators of the coccus without differentiating between the results of the various workers. He thus inferentially makes each responsible for the conclusions of all — perhaps a rather unfair method of presentation in view of the differences in the results and conclusions of the investigators mentioned. It may be pointed out, moreover, that Bull did not work with cocci isolated from the brain and cord of patients with poliomyelitis. The cocci which he did find in the spinal cord in monkeys dead of experimental poliomyelitis he regards as secondary invaders.

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[1] Flexner, S., and Noguchi, H.: Jour. Exper. Med., 1913, **18**, 461.

[2] Mathers, George: Some Bacteriologic Observations on Epidemic Poliomyelitis, THE JOURNAL A. M. A., Sept. 30, 1916, p. 1019; Jour. Infect. Dis., 1917, 20, 113. Rosenow, E. C.; Towne, E. B., and Wheeler, G. W.: The Etiology of Epidemic Poliomyelitis, THE JOURNAL A. M. A., Oct. 21, 1916, p. 1202; Science, 1916, **64**, 614; Observations on Immunity of Monkeys to Experimental Poliomyelitis, THE JOURNAL A. M. A., Jan. 27, 1917, p. 280. Nuzum, J. W., and Herzog, Maximilian: Experimental Studies in the Etiology of Acute Epidemic Poliomyelitis, THE JOURNAL A. M. A., Oct. 21, 1916, p. 1205. Nuzum, J. W.: Bacteriologic Findings in Cerebrospinal Fluid in Poliomyelitis, ibid., Nov. 11, 1916, p. 1437; The Production of an Antipoliomyelitic Serum, ibid., Jan. 6, 1917, p. 24.

[3] Amoss, H. L.: The Cultivation and Immunologic Reactions of the Globoid Bodies in Poliomyelitis, Jour. Exper. Med., 1917, **25**, 545.

[4] Bull, C. G.: The Pathologic Effects of Streptococci from Cases of Poliomyelitis and Other Sources, Jour. Exper. Med., 1917, **25**, 557.

[5] Flexner, S., and Noguchi, H.: Jour. Exper. Med., 1913, **18**, 461.

In contrast to the foregoing are articles published simultaneously by Blanton and by Rosenow and Towne.[6] Blanton's paper concerns a pathologic rather than a bacteriologic investigation. Observations as to the presence of organisms were made on sections of the cord. Organisms were found in the meningeal exudate covering the cerebrum and cerebellum in one case. These organisms were cocci. Some were quite small and appeared in chains, whereas others were seen singly or in pairs. Numerous sections of the cord were studied, and while the authors found it extremely difficult to convince themselves that they had found organisms, in several cases small bodies which varied considerably in size, and generally occurred in pairs, were identified.

Rosenow and Towne[6] have made further studies of the organism which they isolated. They studied the bacteriology of the central nervous systems of ten monkeys which succumbed to experimental poliomyelitis. As is well known, Rosenow's work on the pleomorphism of bacteria has shown that an organism which appears with certain characteristics under some conditions may possess entirely different characteristics when the conditions of growth are modified. The coccus which they isolated from the central nervous system of the monkey remains an ordinary sized diplococcus under aerobic conditions. Sometimes a capsule is demonstrable. Under conditions of low oxygen tension, the same organism may appear in minute form in twenty-four or forty-eight hour cultures in ascitic fluid plus tissue and oil, the medium in which the globoid bodies are grown. After this many factors appear to play a part in determining the type of the growth. With a suitable specimen of ascitic fluid and fresh sterile tissue, and with a scant initial growth, the organisms become small slowly by transverse fission. In such tubes there may be a pure growth of globoid organisms after from five to fifteen days. Rosenow and Towne conclude from these studies, therefore, that:

> The small globoid micro-organism which Flexner, Noguchi and their co-workers have considered to be the cause of experimental poliomyelitis has always, in our experience, been the result of the breaking down of large diplococci, which have been isolated from the central nervous tissues of each monkey infected with experimental poliomyelitis. These organisms have not been isolated from other tissues except lymph glands of poliomyelitic monkeys, nor from any tissue of normal monkeys. The mechanism by which the large forms become small has been demonstrated.

It appears, then, on the one hand, that the workers of the Rockefeller Institute are unwilling to grant that the coccus recently isolated from poliomyelitis by the workers mentioned bears relationship to poliomyelitis in man; they insist that it is merely a streptococcus and produces lesions which may be produced by streptococci in general. On the other hand, Rosenow and Towne claim that these streptococci under proper cultural conditions so modify their characteristics as to simulate the globoid bodies described by Flexner, Noguchi and Amoss, which the latter insist is the true causative organism of poliomyelitis. Obviously, the subject demands further investigation and confirmation. Certainly, if the work of Rosenow and Towne is confirmed, the differences in the assertions of the various experimenters will be quite satisfactorily explained. The fact remains that a very interesting coccus has been found in the brain and spinal cord in patients that have died from poliomyelitis — no one can deny that — but its relation to the disease is not yet determined. It may be a secondary invader or it may have a larger and more direct significance. In any event its discovery appears to be a distinct contribution to the bacteriology of the disease or diseases which have been called poliomyelitis.

THE CIVILIAN DOCTOR IN ACTIVE SERVICE

As noted in THE JOURNAL last week, if the president increases our army to its full strength as provided by the Defense Act of 1916, at least 1,000 additional physicians will be needed for the medical corps of the army. If an army of 500,000 additional men is to be raised, some 3,500 additional medical officers will be required, and if, as has been suggested, an army of 2,000,000 men is to be trained within the next two years, some 12,000 to 14,000 additional officers must be likewise trained with them. While this is only 10 per cent. of all the physicians in the country, it is a much larger percentage of those who are fully qualified by age, physical condition, etc., to become medical officers.

As this demand will take from the field of active practice a large number of physicians who heretofore have not given the matter any considerable study, it may be well to call attention briefly to the special character of some of the duties of the medical officer.

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[6] Blanton, W. B.: An Anatomical Study of Fifteen Cases of Acute Poliomyelitis, Jour. Med. Research, 1917, 36, 1. Rosenow, E. C., and Towne, E. B.: Bacteriological Observations in Experimental Poliomyelitis of Monkeys, ibid., 1917, 36, 175.

We would again emphasize that the duties of the medical officer are vastly different from those of the civilian physician. While there is no doubt that the physician who qualifies for the position of medical officer will soon be able to fulfil those duties and to meet the requirements of the work, there are, nevertheless, many special duties related to the handling of large bodies of men and the discipline of army life with which he will have to familiarize himself and which will require study and training. It must not be forgotten, incidentally, that it is not particularly the surgeon of great technical skill who is wanted, but the man of sane and conservative judgment — the surgeon, the physician and the sanitarian of judgment.

Of course, the first duty of the medical officer during mobilization is the physical examination of the recruit. This is perhaps by far the most important duty that the medical officer is called on to perform. On the physical condition of the recruit depends the mobility of the army, and the medical officer is held personally responsible for the enlistment of unfit men. Physical defects which appear of little importance at the time of examination become factors of vital importance when the soldier is placed under the stress and hardship connected with the duty in the field.

The next step is the initiation of sanitary measures to protect the new recruit. He should be protected immediately against smallpox and typhoid fever. He must be given instructions as to personal cleanliness and his surroundings must be made sanitary. In the vicinity of mobilization camps typhoid fever, malaria and the venereal diseases are prevalent. The administration of antityphoid serum cannot be begun too early, and the first dose should be given as soon as possible after the men arrive in the mobilization camps. Careful record must be kept of the inoculations and, in fact, of all the procedures which have been mentioned. The physician also sees daily at "sick call" those soldiers who feel the need of advice concerning minor ailments. At this time the physician must be especially on the watch for the initial symptoms and sporadic cases of the epidemic diseases. At this time, also, he can observe whether the food that the soldier is receiving is being readily assimilated and whether the soldier is personally clean.

The work of the physician in army life does not end with the care of the soldier. The troops bear a definite relationship to the civilian inhabitants of the community in which they may be quartered. It is the duty of the physician to be sure that neither body affects the other in a too severely unfavorable manner.

The physician is required also to undertake the care of the sick and wounded among the troops on the march, in camp, on the battlefield and after their removal from the battlefield. Arrangements for the transportation of the sick and wounded may devolve on the medical officer. He also is responsible for the ordering and securing of a supply of sanitary material, such as drugs, bandages and litters, which are necessary for the health of the troops and for the care of the sick and injured.

The foregoing is an attempt to paint in broad strokes an outline of the essential problems confronting the civilian physician who is called to active service with the army. About a year ago, at the time of impending hostilities with Mexico, a series of articles on this subject was published in The Journal.[1] Those articles included also a list of references to various books and manuals, such as the Army Regulations, the Manual for the Medical Department, Field Service Regulations, and Harvard Military Hygiene, with which the civilian physician who anticipates a call may familiarize himself in order to appreciate more readily his responsibilities and to grasp more quickly the finer details of the service. A second reading at this time is recommended.

THE NEED AND AVAILABILITY OF FATS

The war has taught many new lessons pertaining to the different branches of science and their application to the everyday arts; it has corrected many a mistaken notion of the past, and it has forced popular recognition of more than one conclusion which science has long inculcated but which the so-called practical man has sometimes failed to recognize. In the matter of diet we know today that a woman laboring in fields usually cultivated by men needs a ration liberal in proportion to her unusual expenditure of energy. It is now recognized that the food needs of active growing children pursuing their usual lively career are unexpectedly large. And continental experience has put an unexpected prominence on the presence of even a moderate allowance of fat in an otherwise acceptable dietary.

The shortage of fats in the countries of central Europe has been known for some time. Fats have never formed a particularly prominent part of the German diet, nor has their production been stimulated by the German agricultural scheme. As early as the autumn of 1915, in addition to the two meatless days per week, two fat-free days were introduced in the regimen of the German population. In the past, German writers on nutrition, following Voit, have rated the desirable quantity of fat in the daily ration at from 56 gm. (nearly 2 ounces) to 100 gm. (for men at hard work). It has been taught by them that with increase in the body's demand for available food fuel it is preferable not to increase too largely the carbohydrate intake, which is usually put at about 500 gm., but rather to add to the quota of fat in about the proportion indicated by the figures just quoted. An increment in fat can be obtained with far less increase in bulk than a comparable augmentation of carbohydrate-containing foods will permit. A gram of fat yields more than twice as much energy as the same unit weight of the other available nutrients.

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[1] What the Civilian Doctor Called to Active Service with the Army Should Know, The Journal A. M. A., Feb. 5, 1916, p. 425; Feb. 12, 1916, p. 508; Feb. 19, 1916, p. 571. Reprints will be sent on receipt of a stamped addressed envelope.

Americans and Europeans have long been accustomed to a daily fat intake of at least 60 gm. (2 ounces) or more. In some of the nations of the Far East, decidedly less fat appears to enter into the day's ration. Taylor,[1] of the University of Pennsylvania, who has had exceptional opportunities for first-hand studies of the food situation in Europe in the present crisis, states that "the fat intake in Germany today is not over 20 grams of fat, animal and vegetable, per capita per day. This is certainly more than enough to cover the needs in fat-soluble vitamines. It is twice the Japanese intake of fat. But the fact remains that the people are hungry." Taylor states further that, in Germany prior to the war, butter was the fat of the rich, lard and margarin the fat of the poor. The per capita consumption was estimated at about 3½ ounces a day, of which nearly half was obtained by importation directly or indirectly.

In the United States, butter and cream are highly prized fat components of the daily diet among those who can afford them.

Bread and butter is a national "food staple." During recent months the price of butter, as well as of eggs, which contain a liberal content of valuable yolk fat, has increased to a level at which these sources of fat threaten to be no longer available in any abundance to the less well-to-do classes. Inevitably recourse must be had to cheaper sources of fats. Vegetable fats have for some time been competitors for recognition in the dietary. In addition to the original salad oil from the fruit of the olive tree, other oils are certain to attract consideration. An expert of the Department of Agriculture[2] has recently reported that even in the Mediterranean countries the total annual production of olive oil is only about half the amount of all the vegetable food oils used. Cottonseed, coconut and peanut oils already are utilized extensively in the United States, corn oil is beginning to appear in the retail stores, and the sunflower oil of Russia, soy bean, poppyseed, sesame, and numerous other oils of Europe are now making their appearance among American edible oils, or sooner or later probably will do so.

Some of the animal fats are peculiarly important for nutrition in that they carry a small amount of some accessory food substance or vitamin which is of peculiar value in growth and ordinary well being.[3] Such features presumably ought to be taken into consideration in placing a physiologic valuation on different fats. Aside from this, however, the question is sometimes raised as to whether different fats exhibit any noteworthy inequalities in respect to digestibility and consequent availability for nutritive needs. Recent investigations in the Office of Home Economics of the Department of Agriculture[4] showed that fairly large quantities of lard, beef fat, mutton fat, butter, olive oil, cottonseed oil, peanut oil, coconut oil, sesame oil, and cacao butter, incorporated in a simple mixed diet, can be well digested, the coefficient of digestibility being proportional to the melting point of the fat. It is now further shown that chicken fat, goose fat, brisket fat, cream, egg-yolk fat and fish fat are all well assimilated, and that they are satisfactory sources of fat for the dietary, at least in quantities up to about 90 gm. (3 ounces) per day. It is thus evident that preparedness in respect to our supplies of fats is not likely to be interfered with because of any limitations set by deficient alimentary utilization of any of the most readily obtainable of these foods. The importance of forestalling a national shortage in these foodstuffs is therefore accentuated.

STATISTICS OF STATE BOARD EXAMINATIONS

We publish this week, for the fourteenth consecutive year, tabulated statistics based on official reports of examinations conducted by state medical licensing boards. Other information having a direct bearing on state boards and methods of registration has been included to enable those interested better to interpret the results. Reports have been received from all state boards, so that the statistics are complete and dependable.

The casual reader may not appreciate the conditions which make the publication of the data important. Medical education and medical licensure in this country are controlled by the fifty individual states (including Alaska and the District of Columbia), each of which, in these matters, is organically independent of the others. In the fifty states are as many different practice acts, providing for sixty-two different examining and licensing boards, no two of which entirely agree. No legislative provision exists for a national control, for cooperation between the boards, or for uniformity of standards. The number of states in which the public is well protected against illiterate and incompetent physicians is still comparatively small, although improvements are rapidly being effected, as shown in Table M. Nevertheless, taking the country as a whole, much confusion and inefficiency still exist in the licensing of physicians. If, for valid reasons, a physician has had his license revoked in one state, it is still possible for him to go to another, often merely crossing a state line, where he may secure a license. If he is caught again, he may as promptly transfer to a third state. To correct these conditions, an exchange of accurate information and a closer cooperation among state boards is essential. The collection of statistics such as are published this week is a step toward this end. The Council on Medical Education of the American Medical Association is glad to place at the service of all state boards its clearing house of information on these matters.

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[1] The facts quoted are taken from a series of exceptionally illuminating papers by Taylor, A. E.: The Control of Food Supplies in Blockaded Germany, Saturday Evening Post, Feb. 17 and 24, and March 3, 1917.

[2] Bailey, H. S.: Some American Vegetable Food Oils, Their Sources and Methods of Production, U. S. Dept. Agric. Yearbook, 1916.

[3] McCollum, E. V., and Davis, Marguerite: Jour. Biol. Chem., 1913, **15**, 167. Osborne, T. B., and Mendel, L. B.: Ibid., 1913, **16**, 423; 1914, **17**, 401.

[4] Langworthy, C. F., and Holmes, A. D.: Studies on the Digestibility of Some Animal Fats, Bull. 507, U. S. Dept. Agric., March 24, 1917; Digestibility of Some Vegetable Fats, U. S. Dept. Agric., Bull. 505, Feb. 13, 1917.

The collection and the publication of these statistics were begun by THE JOURNAL in 1903, but have been continued as one of the functions of the Council on Medical Education of the American Medical Association since 1905. Every report received from state licensing boards is carefully checked, duplications are avoided, errors corrected, and the statistics rendered accurate and reliable. Through the possession of complete alumni lists of medical colleges, the Council is in position to avoid charging a college with a failure which may have been erroneously accredited to it. This information regarding medical graduates has also led to the discovery of instances in which fraudulent credentials have been presented to state boards. Attention of the board concerned has been called to the facts, and in several instances the licenses so issued have been promptly revoked.

These statistics have had a much greater effect than that rendered by a mere numerical report of physicians examined. In many states, splendid systems of record keeping are found where formerly no records whatever were kept, or where the systems were imperfect. They have also furnished abundant argument for practical tests in state license examinations.

The publication of these statistics has had a marked influence on medical colleges. Where previously medical faculties were unaware of the weakness in their methods of teaching, these statistics show how frequently graduates fail at the state license examinations. For example, in the four years that Table D, showing the nonrecognition of medical colleges, has been published, conditions in the colleges have been improved so that the number fully recognized has increased from thirty-one to sixty. The colleges have made marked improvement in their equipment, and better teachers have been secured and better methods adopted.

These statistics have their greatest value when studied in connection with other data collected by the Council on Medical Education and published in THE JOURNAL and in the Council's reports. The state board statistics are based on reports received direct from state boards, and are made more accurate and reliable through data furnished by medical colleges. The statistics published this week, therefore, have been made possible only through the cordial cooperation of both the state boards and the medical colleges, and for this cooperation we again express our acknowledgments.

Current Comment

RESEARCH IN MEDICAL SCHOOLS

An important report[1] in this issue of THE JOURNAL shows that of the twenty-six foundations for medical research in this country, seventeen, or nearly two thirds, are in connection with medical schools. The report also intimates that the "great growth of the spirit of research in this country" accompanied "the phenomenal development which medicine has undergone in recent years." In fact, the growth of medical research has been in direct proportion to the increase in the number of full-time, salaried professors in medical schools. This increase has been influenced, to a certain extent at least, by the inclusion of the possession of full-time teachers and the conduct of research work as one of the ten requisites in the basis[2] on which the Council on Medical Education rated medical schools in its first published classification. Since full-time teachers were urged chiefly in the laboratory branches, the development of research has been most rapid in that division of the medical school. Only a few medical colleges were amply financed to provide full-time professors in clinical departments and, therefore, only a few have all departments, laboratory and clinical, carrying on active research. With larger numbers of full-time clinical professors, medical research in medical schools will attain to a higher degree of efficiency than is possible where that research is in isolated laboratory departments. There cannot fail to be better results where all departments of the medical school are interested and cooperating in research, since then any department has the advantage of all the resources of the medical school; any discovery may be tried out under adequate facilities and safeguards and its value established or disproved. In fact, a modern medical school, with its skilled faculty; with its laboratories thoroughly equipped for medical instruction and research, and with an abundance and variety of clinical material at its command, constitutes the ideal arrangement for medical research. On the other hand, the medical school cannot reach its highest efficiency in teaching unless it is permeated by the spirit of investigation that is engendered by research. The student cannot fail to be benefited. He appreciates better the importance of the fundamental medical branches; that the training in the medical school merely admits him to the field of medicine with its limitless possibilities for usefulness, and that his future success depends on investigation, on keen observation, on accuracy of judgment, and on the skill with which he applies his knowledge. Graduates of medical schools in which research is a prominent feature of the work will be better able than those of other schools to cope with the multiform problems which confront the modern practitioner of medicine.

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[1] "Medical Research in Its Relation to Medical Schools." A Report by Drs. Frederic S. Lee, Richard M. Pearce and W. B. Cannon, composing the Committee on Medical Research of the Association of American Medical Colleges, read at the Annual Meeting in Chicago, Feb. 6, 1917.

[2] "Essentials of an Acceptable Medical College." Report of the Council on Medical Education to the House of Delegates of the American Medical Association, June 6, 1910, THE JOURNAL A. M. A., June 11, 1910, p. 1975, paragraph 12 and p. 1976, paragraph 8.

THE DUTY OF OFFICERS OF STATE AND COUNTY MEDICAL SOCIETIES

The Advisory Commission of the Council of National Defense and the General Medical Board is appealing for the assistance and cooperation of officers of state and county societies in the endeavor to secure the large number of physicians urgently needed. A subcommittee of the General Medical Board has been created to cooperate with state and county societies in this work. Undoubtedly when the officers of these societies realize how necessary their cooperation is, they will regard it as a duty and will lend a willing hand and hearty cooperation when called on. The officers of even remote county societies are extremely important links in the chain that makes effective the organized medical profession of this country.

THE MOBILIZATION OF THE MEDICAL PROFESSION

The development of modern medicine and surgery has established the importance, in any military activities on a large scale, of a competent and adequate staff of medical officers. Present day surgery, hygiene and sanitation have adequately demonstrated their immediate and practical value in the handling of large bodies of troops. The mobilization of the physical forces of the nation now going on concerns the medical profession directly and offers to it an opportunity greater than any it has heretofore had in our national history. Physicians are needed for this most important and valuable service. In a nation like ours, based essentially on peaceful occupations rather than on militarism, reliance must always necessarily be placed on volunteers, drawn from the ranks of civil life, rather than from a special class trained to military service. No duty which confronts the medical profession today is more important than that of supplying, from the ranks of the American medical profession, such medical skill and service, both in quality and quantity, as the present need may require. Discussion of various phases of medical preparedness has been going on for many months past. It is gratifying to know that whatever may be the needs of the future, our country is probably today better prepared to meet any medical emergencies which may arise than at any previous time in its history. Various activities in this direction have from time to time been recorded and commented on in The Journal. One of the most important problems is the instruction of civilian physicians in the details of military hygiene and sanitation. On this subject, the Clinical Club of Albany, over a year ago, devised a plan which is worthy of the careful consideration of groups of physicians desiring to prepare themselves for military service. The resolutions passed by the University of Michigan Medical School and the Alabama State Board of Health are efforts to solve the question of the increased demand for professional services which is bound to follow the diverting of large numbers of physicians from civilian to military work. The plan proposed by the Maryland State Committee on Medical Preparedness is an effort to minimize the practical difficulties which will confront the physician who is asked to give up, for the time being, his private practice for public service. These various plans are worthy of the careful consideration of physicians, both individuals and as members of medical organizations. The present situation calls for cool judgment and deliberate action in order that the medical profession may perform well its full duty.

THE MORE RECENT GRADUATES DESIRED

According to news from Washington, the quota necessary to fill the present vacancies and requirements of the Army Medical Corps will be drawn from among those who graduated in 1912 to 1916. The total number that would be included in such a list would be approximately 19,000. The list of graduates in the five years mentioned, and also for 1917, is as follows:

Medical College Graduates

	From Colleges in Class			
	A	B	C	Totals
1912.........	2,790	1,063	629	4,482
1913.........	2,539	1,050	392	3,981
1914.........	2,626	686	282	3,594
1915.........	2,629	688	219	3,536
1916.........	2,630	695	193	3,518
1917*........	2,641	625	101	3,367
Totals....	15,855	4,807	1,816	22,478

* Seniors.

As stated last week, there is an immediate need of additional physicians for the Medical Corps of the Army, and for the Medical Corps of the Navy. For these positions preference will be given to young physicians. The Army Medical Corps insists on a year's internship in a hospital after graduation; the Navy, however, is not now insisting on this, but is recognizing 1917 graduates. The young man who takes any of the positions now open is availing himself of a great opportunity for life work. The Army and Navy medical services offer a chance for a broad general training, an opportunity to do research in time of peace and, perhaps, of early promotion as never existed before.

MEDICAL COLLEGES AND MEDICAL PREPAREDNESS

In the present national crisis, the conservation of our sources of supply in medical men is quite parallel to the maintenance of productivity in other lines. A medical school is, in a sense, a factory, the output of which is absolutely essential to the maintenance of the armed forces in the field. Particular importance attaches, therefore, to the report of the medical school committee of the Medical Board of the Council of National Defense, printed elsewhere in this issue. No better example could be given of the necessity of a wise foresight in this matter than the experience of England. In the first enthusiasm at the outbreak of the great war, medical students and members of the faculties of medical schools were not only permitted but encouraged to enlist in the line or in various sanitary organizations. No one foresaw the disastrous consequences of this policy until the war had been in progress a year. With the disorganization of the medical schools, there were at that time no graduates to fill the junior grades of the rapidly growing army nor men to take the vacancies as interns in the various civil hospitals. Both medical schools and civil hospitals were disorganized. It then became necessary to withdraw both medical students and teachers from the army and send them back to England to study with the handicap of a year's waste motion, a blow from which the British Sanitary Service has never completely recovered. The problem with us is quite clear. Medical schools and civil hospitals must be kept in operation. Means to hold premedical students, to speed up production, and to turn over all unnecessary men for the Medical Officers Reserve Corps must be devised. Several constructive suggestions are embodied in this report. Medical schools may adopt what has become known as the Italian plan — a wise policy devised by the Italians to profit by England's unfortunate experience. The clinical faculties with the medical students were sent to base hospitals at the front. Service for the army was performed by caring for the sick and wounded while instruction was continued at the same time. Without loss of energy men were graduated directly into the medical corps of the army as the war progressed. One or two schools in this country already have organizations of this type under way. The thing of fundamental importance is to remember that the medical schools must be kept operating. In every other way and by every other means, the national emergency demands that they cooperate in overcoming the present grave shortage of medical men. This can be accomplished by reducing the teaching staff to a minimum, working through vacations to increase the product, or by the Italian plan, which meets the needs both of the service and the future at the same time.

TIME FOR MAKING APPLICATION FOR SCIENTIFIC EXHIBIT EXTENDED

In the Association News in this issue will be found an announcement extending the time for applications for space in the Scientific Exhibit to May 1. This is done in order that all those having scientific material of value for such an exhibit may be given an opportunity to apply for space. The Scientific Exhibit this year will be in the Belvedere or roof garden of the Hotel Astor, probably the most beautiful quarters which it has ever had. Most of the available space has already been assigned. Very little is left, so that anyone desiring space should make application at once in accordance with the directions given under Association News.

Poverty in China.—Even the passing traveler in China is impressed with the all-enveloping and well-nigh universal poverty. *In the police census of Changsha the total population by count was 270,604, including 583 foreigners. Of these, 52,744 were classed as extremely poor, requiring some help from the government practically all the time to prevent actual starvation. An additional 67,687 were classed as moderately poor, requiring government aid in such emergencies as flood, short crops and drouth to prevent starvation. These two classes combined represent 44 per cent. of the total population which regularly each year requires some aid to avoid starvation. And Changsha is among China's richest, most powerful and most cultured cities.*—Dr. Alfred C. Reed, *Scientific Monthly*, January, 1917.

Medical Mobilization and the War

THE GENERAL MEDICAL BOARD OF THE ADVISORY COMMISSION, COUNCIL OF NATIONAL DEFENSE

In The Journal last week, p. 1060, appeared a review of the work already done in the way of medical preparedness through the medical member of the Advisory Commission of the Council of National Defense, Dr. Franklin H. Martin, and his co-workers and committees. The declaration of war made necessary still more active work on the part of the Advisory Commission. For this reason certain of the members of the commission were authorized to appoint a committee, or board, to cooperate with them. Dr. Martin appointed the following as a General Medical Board of the Council of National Defense to cooperate with him "in coordinating civilian military medical activities and to advise in regard to fundamental medical problems in regard to the armed forces of the country":

Dr. Franklin H. Martin, member of the Advisory Commission, Council of National Defense, chairman.

Dr. F. F. Simpson, chief of Medical Section, Council of National Defense, vice chairman.

Surg.-Gen. William C. Gorgas, U. S. Army.

Surg.-Gen. William C. Braisted, U. S. Navy.

Surg.-Gen. Rupert Blue, U. S. Public Health Service, President, American Medical Association.

Col. Jefferson R. Kean, director of Military Relief, American Red Cross.

Dr. William H. Welch, Professor of Pathology, Johns Hopkins University, Baltimore.

Dr. William J. Mayo, Rochester, Minn.

Dr. Victor C. Vaughan, Dean of University of Michigan Medical School, Ann Arbor, Mich.

Dr. Richard P. Strong, Professor of Tropical Medicine, Harvard University, Boston.

Dr. Edward Martin, Professor of Surgery, University of Pennsylvania, Philadelphia.

Dr. George H. Simmons, Editor Journal of the American Medical Association, Chicago.

Dr. John M. Flint, Professor of Surgery and Dean, Yale University, New Haven.

Dr. Stuart McGuire, Professor of Surgery, Medical College of Virginia, Richmond.

Dr. John Young Brown, Professor of Surgery, St. Louis University School of Medicine, St. Louis.

Dr. Charles H. Mayo, President-Elect, American Medical Association, Rochester, Minn.

Dr. Thomas Huntington, Professor of Surgery, University of California, San Francisco.

Dr. H. A. Royster, President of the Southern Surgical Association, Raleigh, N. C.

Dr. Charles H. Peck, Professor of Surgery, University of New York, New York.

Dr. Winford Smith, Superintendent, Johns Hopkins Hospital, Baltimore.

Dr. Frederic A. Besley, Professor of Surgery, Northwestern University, Chicago.

Dr. George W. Crile, Professor of Surgery, Western Reserve University, Cleveland.

Mr. Earl Phelps, Sanitary Engineer, Washington, D. C.

Dr. Edward C. Kirk, Dean, The Thomas W. Evans Museum and Dental Institute School of Dentistry, University of Pennsylvania, Philadelphia.

First Meeting of General Medical Board

The General Medical Board held its first meeting, April 9, in Washington. At this meeting there was a general review of what already had been accomplished and a discussion of what remains to be done. Some eight subcommittees were appointed to facilitate and make more effective the work now so pressing, and to meet the various problems, all more or less urgent, the solving of which requires special knowledge. Space prevents giving the composition of these committees this week. Two of the committees already have made preliminary reports—both of practical and immediate importance, both being unanimously adopted by the General Medical Board. One concerning medical schools is commented on editorially, the other relates to hospitals. Both are in part reproduced herewith:

The Medical Schools and Medical Preparedness

Following is the report of the Medical School Committee, of which Dr. J. M. Flint of Yale Medical College is chairman, to the General Medical Board:

Your committee after consultation with the surgeon-general begs leave to submit the following report: In your efforts to solve the urgent problem before this board and assist the surgeon-general in supplying an adequate number of medical officers for the army and navy, it is important that this country should not repeat England's blunder at the outbreak of the war in permitting the disorganization of the medical schools either by calling the faculties into active service or sanctioning the enlistment of medical students into any of the line organizations. Ordinary foresight demands that we face the possibility that the war on which we have entered may last for years. Medical schools to supply trained men for the future as well as the present emergency must be kept in active operation under any circumstances. While aiding to the uttermost in overcoming the present shortage of men, the necessity of keeping the source of supply open emphasizes the importance of conserving our raw material. Therefore, men now in college looking forward to medicine as a career should be made to understand that it is their patriotic duty to the nation at this time to continue their studies and enroll in the medical school of their choice. Furthermore, no medical student who has not completed three years of medical work should be permitted to give up his course as the country needs his trained and not his untrained service.

There are, however, ways in which the medical schools can help the present situation. The following suggestions are made for your consideration and action:

(1) Medical schools should be prepared to graduate senior medical students promptly in case of need. The faculties should urge all graduates who can be relieved of their obligations as interns in civil hospitals to enroll in the Medical Corps of the Army and Navy.

(2) Medical schools should be encouraged to consider as a form of service the Italian plan by which base hospital units can be organized through the Red Cross. These military hospitals carry with them the clinical faculty and students as medical personnel. This type of organization meets two ends —practical help can be rendered to the army or the navy in time of war and instruction may be continued at the base. This permits the graduation of men directly into the junior grades of the army after the most practical form of military instruction.

(3) Fourth year students may be allowed to substitute in special cases, service in a base hospital for the fourth year in the hospital at home when opportunities are offered for instruction in such military institutions.

(4) Medical schools that do not adopt the Italian plan should be prepared to reduce the faculties to the minimum required for routine work and enroll all men so liberated in the Medical Officers Reserve Corps.

Hospitals and Medical Preparedness

The hospital committee of the General Medical Board—Dr. Winford Smith, superintendent of Johns Hopkins Hospital, chairman—made a rather full report on the matter of hospital conservation. The committee called attention to the fact that the release of medical men from civil duties for service in the army and navy is of vital importance at the present time, and recommended that the General Medical Board communicate at once, by telegraph and by letter, with all general hospitals of one hundred beds or over, urging the present needs and suggesting that hospital authorities reorganize their staffs with a view to releasing as many men as possible, the hospitals to be asked to report to the General Medical Board:

> "The second matter considered and recommended was that a selected list of hospitals be prepared, with reference to size, location near terminal facilities or strategic points, as for example the hospitals of the important points along the Atlantic and Pacific Coasts and the Northern and Southern Borders. Information should be obtained from these hospitals as to what facilities they would place at the disposal of the Government in case of need, the possibilities of expansion, amount of ground available for expansion, whether maintaining convalescent branches or not and the ease with which water, heating and sewage connection could be made in the event of expansion. This list would supply to the Surgeon General's office a list of approved hospitals, available for convalescent military hospitals or for such other purpose as might be necessary.
>
> The third point considered was the ultimate need of hospitals or facilities for handling special lines of medical and surgical work, such as neurological, orthopedic, urological, shell shock hospitals, etc. It is felt that by listing the special lines for which provision should be made and the hospitals equipped for such service, valuable information will thus be made available and that the committee in performing this work may also serve as a buffer between the Surgeon General and his Staff and the large number of those who may have pet projects to propose.
>
> Your Committee suggests that if it meet with your approval authority be given to proceed with the work as outlined. The Committee is ready to extend its functions as occasion demands."
>
> 1st. The members of the Staff needed to carry on the work in the civil hospital.
>
> 2d. The members of the present Staff who can be spared. This second group to be divided into:
>
> A. Those now members of the Reserve Corps.
>
> B. Those not members, but who are willing to become members of the Reserve Corps.
>
> C. Those not members, who require persuasion.

As soon as this list becomes available, it is to be placed in the hands of the surgeon-general. It is believed that such a list will be of value: 1. As representing an organization which will safeguard the civil hospitals, which is of vital importance. 2. It will supply a list of available men, who are willing to enter the Reserve Corps. 3. It will supply a definite list of available men on whom pressure should be brought to bear. It is believed that the handling of the matter in this way will allay the fears with regard to the interests of civil hospitals, which now is a deterrent factor, and release a large number of men, who would otherwise not be available or who would be slow to respond. It would be of great assistance to the surgeon-general's office.

The committee recommended that those men who are selected to remain at home, as represented by approved lists, should be furnished with some emblem to signify that they are recognized as serving their country by performing the home duties.

Will Compulsory Service Be Necessary?

It is reported that if a sufficient number of young medical men do not voluntarily offer their services for the immediate needs of the regular Army and Navy Medical Corps, compulsory service may follow. This statement is not official; it is simply a fairly well authenticated rumor. It would indeed be a splendid exemplification of the high type of medical men available in this country if a sufficient number of the younger men would volunteer promptly, making even the mention of compulsory service unnecessary. The upper age limit is 32.

Obtain Men for the Hospital Corps of the Navy

The navy needs at once at least 2,000 men for its Hospital Corps. Every physician in the land should immediately interest at least one young man in this service. From the mass of applicants that will be thus brought forward the required number of competent men can be enrolled without delay. Here is a patriotic duty that every member of the profession, young and old, can perform that hardly requires him to step outside of his daily routine of life. Do your bit, and do it today.

Young men between 18 and 25 years of age will find in the Hospital Corps of the Navy every opportunity to serve their country, and they will receive fair pay and have varied duties and exceptional opportunities for study. In close association with the doctors of the navy they will have to do with first aid to the injured; the care of the sick; surgical procedures; and chemical, bacteriologic and pharmaceutic methods, both on ships at sea and at hospitals and stations ashore.

Service may be either by enlistment as a hospital apprentice for a period of four years or by enrollment as a hospital apprentice in the Naval Reserve Force for the period of the war.

Ask your postmaster where the nearest Navy Recruiting Office is located, and send your candidates there. Instruct every candidate to ask for the doctor and to tell him that he desires to join the navy as a hospital apprentice.

Let the response to this call show the patriotism of our profession.

The Albany Plan

In his address before the House of Delegates at the Detroit session (The Journal, June 17, 1916, p. 1938), Dr. Vander Veer described the work being carried on by the Clinical Club of Albany for the education of its members in military surgery and hygiene. This included a preliminary course of reading, lectures and discussions on the various subjects necessary for the training of the medical military officers, the preparation of pamphlets and typewritten outlines comprising digests of the various subjects studied and the formulating and working out of definite problems such as might arise during conditions of actual warfare. This plan, begun in November, 1915, by a small group of Albany physicians, has since come to be known as the "Albany Idea," and has been developed and issued in pamphlet form so that it can be taken up and followed out by groups of physicians or local medical societies. The same method could, in the opinion of Surgeon-General Gorgas, be applied to the entire country. Pamphlets on organization and on the duties of medical officers based on the army regulations and the manual of the medical department have been prepared and distributed to the members by the Clinical Club. Each member has been given special topics for study on which he has been expected to prepare papers for presentation and discussion. In addition, various problems covering contingencies which might arise in time of war have been presented, parts of which have been assigned to individual members, orders issued and reports returned as in actual service. For example, problem one assumes that a portion of the Atlantic Fleet has been defeated and Boston taken by the enemy, who has also succeeded in effecting a landing on the New Jersey coast and has routed the force of the United States troops sent against them, resulting in the capture of New York City. The United States troops are assumed to be slowly retreating from Boston and New York, converging on Albany as a base. It is further assumed that the water supply of the city is in danger of being contaminated. The members assigned to different parts of the problem then undertake to determine the exact sources of the municipal water supply, the daily amount required, how it is stored and distributed, how wastage can be prevented, the possible sources of contamination and methods of prevention, the most vulnerable points for crippling the water supply and how they can be guarded, possible methods of fire control in case the usual supply was destroyed, an emergency water supply, simple methods of purifying an emergency supply, methods of distribution and other related points. A second problem assumes the presence in or near Albany of 100,000 refugees and endeavors to work out methods by which Albany's resources could be utilized in caring for these people so that their own health and that of the community could be guarded. A third problem assumes the occurrence of two battles nearby and the sending of 10,000 wounded to Albany with the consequent need of providing quarters, distributing and caring for the wounded and securing the supplies needed for their care. This problem involved practically a complete survey of the hospitals and buildings capable of being converted into temporary hospitals, the local supply of medical men, nurses, dressings, drugs, instruments, operating room supplies and hospital equipment. A fourth problem assumes the use of Albany as a base and the location of large concentration camps near the city with the prevalence of typhoid fever, requiring the investigation of the camps, their sewage and refuse disposal, general policing, water supply, etc., the examination and immunization of all persons in the camps, the careful inspection of the water, food and milk, the elimination of flies, etc. The pamphlet also contains an outline of the plan of organization of the army and especially of the medical department, the duties of medical officers and instructions regarding the examination of troops. Copies of this pamphlet can be obtained from Dr. Joseph A. Cox, 35 Clinton Avenue, Albany, N. Y., the chairman of the committee. It is hoped that its distribution will stimulate interest and provide a working plan for sanitary surveys elsewhere similar to those made in Albany.

The Medical Reserve Corps

It should be clearly understood by those interested, now that war exists, that medical officers of the Reserve Corps are subject to call and must respond if called. This is as it should be. It would be embarrassing to the surgeon-general's office, and to those responsible for the medical departments of the army and navy, to discover, when the emergency came, that they had been depending for support on what finally proved to be a "broken reed." Many members of the Reserve Corps are under misapprehension as to this point, they should consider their responsibility now, before it is too late, and act accordingly.

Surgical Squads in the European War.—Our Paris correspondent this week (page 1136) calls attention to what would appear to be a practical method of economizing the surgeon's time in active warfare.

Belgian Relief.—The commission for relief in Belgium announces that for the week ending April 4, $101,130 was received for the Belgian relief fund, making a total contribution from the United States since the beginning of the war of $10,636,647. The commission is arranging that Asst. Director Prentiss Gray and three American accountants shall remain in Brussels for a month or more to instruct the new Dutch commissioners in their work.

Ambulances Donated.—Mr. Jacob H. Schiff has donated five motor ambulances to the New York Red Cross for use with military base hospitals organized in New York.

Georgia Survey.—The officers of the Medical Reserve Board of Augusta began a sanitary survey of the city, March 26, to determine the fitness of Augusta as a site for an army base hospital and mobilization camp.

Hookworm Infection.—It is reported from Camp Wilson, San Antonio, that there is widespread infection from hookworm among the troops from Alabama, Mississippi and Texas, but that the disease is now under control.

Twenty-Five Thousand Dollars to Equip Hospital Base.—A gift of $25,000 from Mrs. Henry L. Collins of Sewickley Heights will be used to equip the University of Pittsburgh Hospital Unit. This will enable the Red Cross organization to care for 500 wounded.

Minnesota Hospital Unit.—The University of Minnesota has offered to the government a base hospital unit, of which Dr. Arthur A. Law has been placed in command. One half of the cost and equipment has been supplied by Drs. William J. and Charles H. Mayo of Rochester, and the other half by contributions of business men of the state.

Health Facilities Offered the United States.—Health Commissioner Haven Emerson, New York, has announced that all stocks of serums and vaccines of the department laboratories at Otisville will be available for the federal government in case of war. He also has offered to supply the government with a corps of food inspectors if desired.

Promotions in Guard.—The following promotions have been announced in the New York Guard: Lieut.-Col. William S. Terriberry, chief surgeon of the New York Division, has been made chief surgeon, N. Y., N. G.——Majors Edward R. Maloney, M. C., Walter C. Montgomery, M. C., and William H. Steers, M. C., have been promoted to lieutenant-colonel.

Medicomilitary Instruction.—A course of instruction arranged for the members of the senior class of the University and Bellevue Hospital Medical College was given by Major Frederick S. Macy, M. C., U. S. Army, at Governors Island, N. Y., April 9 to 14, inclusive. The course consisted of lectures on military surgery and hygiene and instruction in military drill.

Philadelphia Active for Medical Preparedness.—The Philadelphia County Medical Society has arranged plans for service in time of war. Dr. J. Norman Henry was appointed chairman and Dr. William H. Walsh, secretary of a special committee.——April 4, a general meeting was held at the Academy of Natural Sciences, at which Lieut.-Col. Henry Page, M. C., U. S. Army, and Lieut.-Com. Robert A. Bachmann, U. S. Navy, delivered addresses.——As a result of a meeting in the Acadamy of Natural Sciences, April 5, at which Lieut.-Col. Henry Page, U. S. Army, and Surg.-Gen. Robert A. Bachmann, U. S. Navy, urged members of the Philadelphia County Medical Society to enlist in the Medical Reserve Corps of both branches of the service, several hundred have already enlisted and others have signified their desire to do so.

Police Surgeons Mobilized.—Announcement has been made from New York City by Chief Surg. Edward T. Higgins that 150 physicians and surgeons had volunteered their professional services under the direction of the police department. An organization by boroughs has been perfected and Dr. Higgins is obtaining the necessary equipment for field services. The expense of this equipment is to be defrayed by women interested in the work.

Alabama Favors Early Graduation for Medical Service.—At a meeting of the Alabama State Board of Health, held April 2, resolutions were adopted to recognize as having completed the prescribed course, students graduated early from the school of medicine of the University of Alabama, or any other Class A medical school whose diplomas are recognized by the board, who enter the Federal service. Such students will not be denied the privilege to examination by the board by reason of having failed to spend in their medical college courses for the senior year the amount of time prescribed by the board.

Mobilization of New York Hospitals.—On April 8, Mayor Mitchell of New York announced the appointment of a committee on hospitals of the Mayor's Committee on National Defense. Dr. S. S. Goldwater, consultant on health and hospitals of the Board of Estimate and Apportionment, is its chairman. Preliminary steps have been taken to mobilize the resources of the municipal hospital of New York, including the department of public charities, Bellevue and Allied hospitals and the department of health. Various city departments and all the hospitals of New York City have been asked to take membership on this committee. The committee may be addressed care of mayor's office.

Philadelphia War Hospitals and Supplies.—Mrs. Charles C. Harrison, wife of the ex-provost of the University of Pittsburgh, and treasurer of the Women's Working Committee of the South-Eastern Chapter of the American Red Cross, has raised $50,000 for the equipment of the American base hospitals in or near Philadelphia.——The Merion Civic Club has announced the opening, in the near future, of the "first distinctly Red Cross House in the United States." A site for the headquarters has been purchased by the society.——At a special meeting of the North-Western General Hospital staff, Governor Brumbaugh and Mayor Smith were offered the use of the hospital for the care of wounded soldiers and sailors, and plans were made for a course of public instruction in first aid work and emergency nursing.

Base Hospital Ready.—The Johns Hopkins Base Hospital is rapidly being brought up to the standard required by the government and within two weeks it is expected that the listing of attendants, the assemblage of supplies and the full muster of officers will be completed. The necessary funds for supplies and equipment have been provided. The roster of twenty-five physicians is complete; fifty nurses and twenty-five nurses' aids have volunteered for service. Dr. George Walker will be adjutant to Dr. Winford H. Smith, Dr. John M. T. Finney will be chief of the surgical division and Dr. Thomas R. Boggs will direct the laboratory division. Fourth year students of the medical school of the university have volunteered their services as well as a large percentage of the third year men.

Illinois Committee on Medical Preparedness.—The following committee has been appointed to coordinate the medical colleges and organizations of the state: Dr. L. L. McArthur, chairman; Dr. D. A. K. Steele, president, Illinois Division Medical Reserve Corps and dean of Illinois College of Medicine; Dr. William L. Noble, president, Illinois State Medical Society; Dr. A. A. O'Neill, president, Chicago Medical Society; Dr. John M. Dodson, dean, Rush Medical College; Dr. J. P. Cobb, dean, Hahnemann Medical School; Dr. Alfred Deroulet, dean, Loyola University Medical School; Dr. G. E. Wineken, secretary, Chicago College of Medicine and Surgery; Dr. Richard H. Street, president, Illinois Homeopathic Society; Dr. Albert J. Ochsner, University of Illinois; Dr. Wilbur H. Gilmore, secretary, Illinois State Medical Society, Mount Vernon; Dr. Fred A. Besley, Northwestern University Medical School; Dr. Charles E. Kahlke, Hahnemann Medical School; Dr. Dean D. Lewis, Rush Medical College; Dr. James F. Percy, Galesburg, and Dr. Arthur R. Kendall, dean, Northwestern University Medical School, secretary of the committee.

Preparations for War in New York Hospitals.—In addition to the American Red Cross Hospital units that have been organized in connection with the larger hospitals of New York, a plan is announced for the establishment in connection with the Medical Department of Columbia University of a hospital of 1,000 beds to be kept in readiness for any emergency. The proposed site of this hospital is the old Columbia Oval at Bainbridge Avenue and East Gunhill Road, the Bronx. The plan as submitted to the trustees of the university was developed by Dr. J. Bentley Squier, Jr., and endorsed by President Butler and Dr. Samuel W. Lambert, Dean of the College of Physicians and Surgeons. It is proposed to make this hospital a center for training in military surgery, and that all future students graduating in medicine shall have received training in military surgery. The present matriculates of the College of Physicians and Surgeons will receive this training at once. The hospital will be equipped to send field units, consisting of men, materials, tents and all necessary accessories, to any point where their services may be needed, not only in war but to the scene of any accident requiring such service.——St. Luke's Hospital has evolved plans making that institution a base hospital, similar to the American Ambulance Hospital in Paris. The capacity of the hospital will be doubled by the erection of temporary buildings, and the medical and nursing staff will be enlarged. The Columbia University trustees have offered the St. Luke's Auxiliary a portion of South Field as a site for the temporary hospital. A corps of orderlies will be recruited from among medical students.——The trustees of the Cathedral of St. John the Divine, located near St. Luke's Hospital, have announced their intention of offering the Cathedral building as a pavilion hospital.——The New York Ophthalmic Hospital has offered the use of its buildings and equipment to the secretaries of war and navy. This is the first hospital devoted exclusively to the treatment of diseases of the eye, ear, nose and throat to offer its services to the government.

Resolutions Passed by the Faculty of the University of Michigan Medical School.—The faculty of the University of Michigan Medical School on April 2, 1917, passed the following resolutions:

1. It is the opinion of the faculty of the University of Michigan Medical School that in meeting the demands for medical officers in the national service, the military authorities should give first preference for enlistment to the members of the medical classes of the past two years, viz.: 1915 and 1916.

Note:—These young men have recently finished their medical courses and having taken in part or altogether their hospital training, should have the latest and best information in scientific medicine, and not having as yet established themselves in practice, are best fitted to be selected for military service.

2. In view of the probably urgent demands for trained medical men, the faculty of the University of Michigan Medical School desires to place itself on record as being ready and willing to make its courses of instruction continuous through the summers of 1917 and 1918. This proposition will be submitted to the various state boards of licensure for their approval.

Note:—If this provision goes into effect, a week after the close of the present session, the session of 1917-18 will begin. Those who are now Juniors will become Seniors and may be graduated in January, 1918.

Note:—In taking this step, not only the military demands upon the medical profession, but civil demands as well are taken into consideration.

3. Taking into consideration the future needs of the country for trained medical men, it is the opinion of the faculty of the University of Michigan Medical School that it is advisable for the undergraduate medical students to complete their course of instruction and not to enlist.

4. The faculty of the University of Michigan Medical School recommends that not less than two hours per week be set aside for the military drill of undergraduate students, and that in addition to the ordinary infantry drill, we recommend training along the lines developed by the Clinical Society of Albany, and known as the "Albany Plan."

Note:—The medical officer should first of all be a soldier. This is necessary in order to make him most efficient as a medical officer.

5. That copies of these resolutions be furnished for suggestions of approval or disapproval to the following bodies:

(1) The surgeons general of the army and navy.
(2) The National Medical Committee on Preparedness.
(3) The National Research Council.
(4) The faculties of other medical schools.

6. That a list of the graduates of the classes of 1915 and 1916, with their standing while in the school and their present addresses, be sent immediately to the surgeons general of the army and navy.

Punishing Patriotism: A Suggested Method of Meeting This Evil.—Undoubtedly in the past civilian doctors who have been patriotic and who have served their country in the army or navy have been in a measure punished for such service by finding their practice dissipated and gone on their return home. The knowledge of this has naturally acted in preventing many a physician entering the Officers' Reserve Corps of the United States at this time.

To meet this situation the Maryland State Committee on Medical Preparedness, of which Dr. Gordon Wilson, Baltimore, is secretary, has devised the following plan to be presented at the annual meeting of the state society (Medical and Chirurgical Faculty), to be held in April.

This plan has already been endorsed by the Baltimore City Medical Society.

The committee proposes to have offered the following *resolutions:*

1. *Resolved,* That the Medical and Chirurgical Faculty of Maryland recognizes the patriotism of those members of the medical profession resident in Maryland who volunteer for the service of the U. S. Government, and in appreciation of this we recommend that should these members of the profession be called into active service, the doctors who shall attend their patients should turn over one third of the fees collected from such patients to the physician in active service or to his family.

2. *Resolved,* That the secretary of the society shall have prepared letter blanks according to the form attached, to a number sufficient to supply those physicians who are called into active service, with a sufficient number so that they can send a filled-out form letter to each patient, a carbon copy going to the doctor who has agreed to look after the physician's practice, and a second carbon copy to be sent to the secretary of the state society.

The secretary of the state society is instructed to file the carbon copies received by him, and on notification ,by a physician that he has terminated his service with the government and has resumed his practice, the secretary of the state society shall then send out to each of the patients of this physician whose names and addresses he has received in the filed letters a letter stating that the physician has resumed the practice of medicine, and requesting the patient in the name of the society to recognize the physician's patriotism by summoning him should he be in need of medical attention.

This method is the only one devised which can in any way meet the situation that confronts the physician who is patriotic, and who is penalized for his patriotism by the loss of his practice. By this method the profession at large is "put on its honor," the patients of the physician are urged to retain his services, and this urging is done, not in the physician's name, but in the name of the profession and as a patriotic duty.

It is proposed, should these resolutions be adopted, to send a description of the plan to every member of the profession, a copy of the form letter, and also two cards, one to be signed by the physician endorsing personally the first resolution, and the other an application for admission to the Medical Officers' Reserve Corps.

Below are a specimen of the proposed form letter and two cards.

PROPOSED FORM LETTER

(Regular Letter-Head of Medical and Chirurgical Faculty.)

M——————
Street——————
Postoffice——————

Dear M—————: As a member of the Reserve Corps of the United States Army (Navy), I have been ordered into active service by the Government, and on that account I am writing to you of this fact, so that, in case of illness, you may summon some other doctor to attend you. In my absence Dr. ——— of ———, Telephone No. ———, has kindly consented to attend my patients, and I can heartily recommend him.

Sincerely, ——————

Resolution adopted by Medical and Chirurgical Faculty of Maryland:

"Resolved that the Medical and Chirurgical Faculty of Maryland recognizes the patriotism of those members of the medical profession resident in Maryland who volunteer for the service of the U. S. Government, and in appreciation of this we recommend that should these members of the profession be called into active service, the doctors who shall attend their patients should turn over one-third of the fees collected from such patients to the physician in active service or to his family."

Please present this letter to any doctor whom you may call in to attend you.

CARDS

I agree to abide by resolution adopted in relation to fees for attendance on patients of doctors ordered into active service for the government.

In the remote chance of misunderstandings or disagreements arising under this resolution I agree to submit the facts to the board of censors of the society and abide by their decision.

(Signed) ....

RESERVE CORPS

I hereby make application for appointment to membership in Reserve Corps of U. S. Army / Navy (scratch one out).

(Signed) ....
Address ....
Date ....

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

Legislative Notes.—The Arkansas legislature has passed a bill creating a bureau of sanitation under the state board of health, and providing that all hotels or restaurants where meals and sleeping accommodations are furnished for transient guests shall be under the control of this bureau.——The legislature has also appropriated $2,000 for the medical department of the state university, and has authorized the building of a state charity hospital.

COLORADO

Fee Splitting Forbidden.—The Colorado legislature has passed the bill introduced by Senator Knauss prohibiting the division of fees by physicians, surgeons, chiropractors, midwives or chiropodists.

DISTRICT OF COLUMBIA

A Warning Against Exhaust Gases from Gasoline Engines.—Every person who takes out a license to operate an automobile, either as owner or chauffeur, in the District of Columbia, is to receive hereafter a leaflet warning him of the dangerous character of the gases given off by gasoline engines. The same leaflet will be distributed among the operators of gasoline launches and wherever gasoline engines are to be found.

To Prevent Measles by Publicity.—Because of the unusual prevalence of measles and of the recognized failure of ordinary official methods for the control of that disease, the health officer had had printed and distributed about 30,000 leaflets describing measles and telling what the parent and the schoolteacher can do to prevent it. Distribution has been made in the public and private schools and the Sunday schools, through the public library and its various branches, and through all available agencies.

GEORGIA

Elected Hospital Trustees.—Drs. Walter E. Barber and Thomas D. Longino have been elected trustees of Grady Hospital.

Personal.—A banquet was given by the medical profession of Atlanta, March 9, in honor of Dr. John G. Earnest, marking the fiftieth anniversary of his entrance into the practice of medicine.

ILLINOIS

Memorial Service for Dr. Sachs.—Memorial services for the late Dr. Theodore B. Sachs were held at Naperville, April 2, by the Jewish Consumptive Relief Society.

Personal.—Dr. J. Morgan Sims, Collinsville, formerly coroner of Madison County, is under treatment for neurasthenia in a sanatorium in St. Louis.

Director of Public Health Appointed.—Governor Lowden has announced the appointment of five members of his cabinet created under the Consolidation bill. Those appointed include Dr. C. St. Clair Drake, director of the Department of Public Health. The director of the Department of Registration and Education has not yet been announced.

Chicago

Campaign of Sanitation.—At a mass meeting held at the Cort Theater, March 30, a campaign was inaugurated against infantile paralysis. Drs. Edwin W. Ryerson and William A. Evans delivered addresses. The plan contemplates a committee to look after the sanitary conditions in every city block, a precinct captain to watch over the various block guardians and a ward supervisor and committee for each ward.

Consulting Staff for Isolation Hospital.—Mayor Thompson has appointed on the consulting staff for the new Municipal Contagious Disease Hospital Drs. Isaac A. Abt, Merlin Z. Albro, Robert A. Black, Jacob F. Burkholder, Rachael Hickey Carr, Howard R. Chislett, Arthur M. Corwin, Frederick G. Dyas, Roy R. Ferguson, Nathaniel A. Graves, Clifford C.

Grulee, Elmer E. Henderson, Julius H. Hess, Henry E. Irish, Richard H. Street, Theodore Ticken, Charles A. Wade, W. Henry Wilson and F. Robert Zeit.

INDIANA

What the Legislature Did.—The Chiropractic bill providing for a separate examining board was killed by the legislature; also the bill to modify the medical laws. Three hundred and fifty thousand dollars was appropriated for the medical department of the university, but the governor refused to approve the appropriation. The all time county health officer bill and the bill providing for the medical examination of schoolchildren were both defeated. Bills providing for health insurance, the regulation of venereal diseases, the prohibition of the sale of habit-forming drugs and the requiring of health certificates for a marriage license were also killed.

IOWA

Chiropractic Bill Defeated.—A bill providing for the licensing of chiropractors has been killed in the house.

MARYLAND

Personal.—Dr. Lewis A. Sexton, who has been superintendent of the Johns Hopkins Clinic for several years, has accepted the position of superintendent of the Hartford Hospital, Hartford, Conn., and will take up his new duties within the month.

Medical Building.—The Young Men's Christian Association at Saratoga and Charles streets, Baltimore, has been sold for more than $200,000. The building will be torn down and on its site the new medical building, a steel and concrete gothic structure, eight stories in height, to cost about $300,000, will be erected.

Meetings.—The second of a series of public health lectures under the auspices of the Medical and Chirurgical Faculty of Maryland was held in Osler Hall, Baltimore, April 10. The topic under discussion was the mental defective. "How the Public Schools of Baltimore City and the Counties Attempt to Meet the Problem of the Mentally Retarded Child" was the subject for the afternoon session, and "How the Criminal Courts Attempt to Meet the Problem of Those Mentally Irresponsible" was discussed at the evening session. Among the speakers were Dr. Henry H. Goddard, director of the Research Laboratories, Vineland, N. J.; Dr. Joseph P. Byers, executive secretary of the National Committee of Provision for the Feeble-Minded, Philadelphia; the various judges of the supreme bench of Baltimore; Dr. M. Bates Stephens, superintendent of the state board of education of Maryland; Prof. Charles J. Koch, superintendent of the Baltimore city public schools, and Dr. C. Macfie Campbell of the Phipps Psychiatric Clinic.

MICHIGAN

Speaks in Muskegon.—At the meeting of the Muskegon-Oceana County Medical Society, held at Hackley Hospital, Muskegon, March 30, Dr. Adelbert M. Moody, Chicago, spoke on "Laboratory Methods in Diagnosis."

Medical Department and Public Library.—The Genesee County Medical Society has obtained the consent of the board of education of Flint to use a portion of the public library for a medical department, for the use of local physicians.

Hospital Changes Name.—The president of the Children's Free Hospital Association, Detroit, announces the change in the name of the institution to the Children's Memorial Association. This does not mean that the free care of sick children is to be abolished by the hospital.

Graduate School in Detroit for University.—The regents of the University of Michigan have adopted a resolution providing for taking over the Detroit School of Medicine as a graduate school, provided $1,000,000 can be raised by the latter to insure the state against loss.

Health Work in Detroit.—Dr. James W. Inches, formerly mayor of St. Clair, has been appointed health officer of Detroit until July 1, to fill out the term of Dr. William H. Price, resigned.——Dr. Guy L. Kiefer, formerly health officer of Detroit, has been appointed consulting health officer.——The scarlet fever situation in Detroit has been serious, a total of more than 1,240 cases having been reported up to March 27. The hospital capacity of the city was overtaxed, and the demand for nurses was far in excess of the possibility of supply.

Personal.—Dr. Leo C. Donnelly, Detroit, has returned to the United States after a year's service in French Base Hospital, No. 43, bis., back of the Somme front.——Dr. Richard M. Olin, Caro, has been elected secretary of the state board of health, to succeed Dr. John L. Burkart, Big Rapids.——Dr. Roscoe C. Main has resigned as health officer of Marquette, and has been succeeded by Dr. Arthur K. Bennett.——Dr. Eugene Smith was the guest of honor at a dinner given by the Ophthalmological Club and the Oto-Laryngolocial Club of Detroit, March 21, at the Hotel Statler, in celebration of the semicentenary of practice of Dr. Smith in Detroit.

MINNESOTA

Personal.—Dr. Frederick Barrett, mayor of Gilbert, is ill with smallpox.

Meningitis.—The old Maternity Building of the St. Paul City and County Hospital has been prepared for patients suffering from spinal meningitis.

Quarantine Hospital for Minneapolis.—The city council, March 9, endorsed the request of $75,000 by the Board of Charities and Correction for the purchase of land at Seventh Avenue South and Fifth Street for a quarantine hospital.

Hospital News.—It is announced that a new wing will be added to the Norwegian Lutheran Deaconess Hospital, Minneapolis, to cost $50,000, for exclusive use as a maternity hospital, and that the Fairview Hospital will build an addition to cost $100,000.——The new Kelly Hotel building, Rochester, was opened, March 21, as a hospital, under the management of the Roberts Hotel Company. It is now known as the Stanley.

Smallpox.—The smallpox epidemic at Eveleth is believed to be under control. About 8,000 people of Eveleth and its environs have been vaccinated.——Eleven of the sixteen cases of smallpox in Duluth have been traced to two children who arrived in the city from Eveleth several days before.——During February there were 130 cases of smallpox in Minneapolis and 249 cases in the entire state.——Ernest Amundson, Perham, is said to have been sentenced to ten days in the work house by Judge Bardwell of Minneapolis on the charge brought by Dr. Harry M. Guilford, city health commissioner, that he had wilfully exposed the public to the disease. Amundson was arrested as he stepped out of the quarantine hospital after having been confined two weeks with smallpox.

NEW JERSEY

Venereal Diseases Reportable.—The legislature has passed a bill to compel the reporting of the state department of health of all persons suffering from venereal diseases. The record is not to be published nor is it to be a public record. Its purpose is to conserve the public health by empowering the state department of health to establish such quarantine measures as may be necessary, at the same time insuring privacy and protecting the victims of these diseases from exposure and exploitation. The legislature has also passed a bill making it a misdemeanor for any one affected with a venereal disease to marry.

NEW YORK

To Investigate Sickness.—A bill providing for a commission to investigate sickness among wage earners in New York creates a commission of five members of the legislature and four others, including wage earners, employers and physicians. The state commissioner of health and the industrial commission are authorized to cooperate in recommending methods for the better protection of workingmen and their families in time of sickness. The creation of the commission has the approval of the advocates of the Mills bill for health insurance and also of those who are not yet ready to see such legislation passed.

New York City

Orthopedic Surgeons Organize.—Orthopedic surgeons and representative men of the several orthopedic hospitals of the city met, March 29, at the New York Hospital for Ruptured and Crippled, on the invitation of Dr. Virgil P. Gibney, and effected an organization for the surgical care and treatment of orthopedic patients in the event of hostilities. Dr. Gibney was elected president and Dr. George Barrie, secretary. A committee on organization was appointed.

Health Campaign Among Negroes.—The death rate among negroes in this city is almost double that of the city at large. In 1916, the negro death rate was 24.4 per thousand as compared with the general city death rate of 13.7 per thousand.

Colored babies born in this city have only half the chance of living through the first year that white babies enjoy. The department of health will conduct an educational campaign during the last two weeks in April in cooperation with the National League on Urban Conditions Among Negroes.

Hospital Social Service.—The New York Conference on Hospital Social Service will be held at the New York Academy of Medicine, April 18, at 8:15 p. m. The subject of the evening is "The Control of Gonorrhea and Syphilis." The program includes "Survey of Four Years' Clinical Work," by Dr. Henry A. Fisher; "Dispensary Control," by Dr. Alec Nicol Thomson, Brooklyn; "Community Control," by Mr. Frank Osborn, New York Social Hygiene Society, and "Dispensary Follow-Up," by Miss Grace Barclay, Johns Hopkins Hospital.

Personal.—Dr. Lee K. Frankel, third vice president of the Metropolitan Life Insurance Company, has been appointed a member of the Council on National Defense.——Dr. Hermann M. Biggs, who recently returned from France, delivered an address to the third and fourth classes of the University and Bellevue Hospital Medical College, in the amphitheater, April 5, detailing his experiences and the medical conditions as they exist in France.——Dr. Linsly R. Williams, now deputy commissioner of the New York State Board of Health, has been appointed first deputy to the New York City Department of Health.——Dr. Edward W. Ryan, formerly in charge of the American Hospital in Belgrade, has been asked by the Serbian government to reorganize the sanitary and relief work north of Saloniki. His work will be to put on a permanent basis the beginning made by the American Sanitary Commission in fighting typhus in Serbia two years ago.

OHIO

Ohio Scores Clean Records.—The Ohio legislature has adjourned with a clean record on public health subjects. The osteopathic, optometry and Christian Science bills were defeated. The bill amending the workmen's compensation law, abolishing the $200 limit for medical, surgical, nurse and hospital attendants, was passed. The model health insurance bill of the American Association for Labor Legislation was introduced, but was later withdrawn, and a substitute bill introduced providing for the establishment of a state commission to study health insurance, appropriating $25,000 for such investigation and directing the commission to report to the legislature in 1919.

OKLAHOMA

Hospital for University Medical Department.—The legislature has passed a bill appropriating $200,000 for the building and equipment of a hospital at Oklahoma City, to cost $200,000 and to be conducted under the supervision of the medical department of the state university. The Tulsa County Medical Society has formally endorsed this action of the legislature.

Personal.—Dr. Frank Woolard, Welch, sustained a fracture of the arm by the overturning of his automobile recently.——Dr. John S. Stults, Olustee, was accidently shot by a hunter while driving in the country recently.——Dr. Dumont D. Howell, Nowata, sustained painful injuries recently in a collision between automobiles.——Dr. Okey S. Somerville, Bartlesville, has been appointed physician of Washington County, and Dr. John R. Collins, Nowata, has been appointed county physician of Nowata County.

OREGON

Legislative Appropriations.—The legislature appropriated $1,000 for the medical department of the state university. A bill was passed reducing the appropriation of the state board of health from $30,000 to $25,000 for the next two years. A bill allowing osteopaths to do minor surgery was also passed.

PENNSYLVANIA

Philadelphia

Hospital Incorporated.—The Physicians' General Hospital has been incorporated with a capital stock of $50,000. The name of Henry S. Sultzer appears as the incorporator.

Tuberculosis Dormitory.—A new dormitory for tuberculous patients will be erected this summer at the Byberry Farms, completing the work being done to relieve congestion in the Philadelphia General Hospital. The dormitory will have accommodation for 300 patients.

Personal.—Dr. Lina D. Schwatt has been appointed physician to the insane department for the feebleminded at Byberry.——Dr. William J. Enders has been elected medical superintendent of the Protestant Episcopal City Mission Home for Consumptives in Chestnut Hill.

Roentgen-Ray Department Opened.—The Philadelphia Orthopedic Hospital and Infirmary for Nervous Diseases has opened a new Roentgen-ray department, equipped in part through the memorial fund to Miss Maria Gouverneur Mitchell, daughter of the late Dr. S. Weir Mitchell, one of the founders of the hospital. Dr. Ralph S. Bromer is in charge.

To Combat Infantile Paralysis.—The Child Federation of Philadelphia, cooperating with Dr. Wilmer Krusen, director of public health and charities, began a campaign, March 24, to combat infantile diseases believed to be caused by flies. An appeal has been made to the various institutions and social charitable agencies to provide inspectors for the 6,000 stables in the city, which are breeding places for flies.

Symposium on Occupational Diseases.—The meeting of the Philadelphia County Medical Society, April 11, was devoted to a discussion of the industrial or occupational diseases. Dr. Joseph W. Schereschewsky, U. S. P. H. S., presented the main paper of the evening. Other speakers included Mr. John Price Jackson, commissioner of labor and industry, Harrisburg; Dr. Walter G. Hudson, Wilmington, Del., medical director of the DuPont Powder Works, and Dr. T. Grier Miller.

Medical Institutions.—The Babies' Hospital of Philadelphia, April 2, elected Dr. Charles A. Fife, president of the board, other members being Drs. Joseph S. Neff, Arthur Newlin, Joseph Sailer, John F. Sinclair and James E. Talley. Eleven thousand dollars has been contributed toward the purchase of a site for a dispensary building.——Public lectures for women in the course on "Health Problems of Every Day Life," at the Woman's Medical College, North College Avenue and Twenty-First Street, include one on April 11 by Dr. Ellen C. Potter on "The Health of Schoolchildren" and another on April 18 by Dr. Arthur A. Stevens on "Conditions and Care in Old Age."

SOUTH DAKOTA

State Legislature Acts.—The chiropractic bill failed to pass. A law forbidding the division of fees was enacted.

TENNESSEE

Disciplinary Laws for Physicians Enacted.—The legislature has passed a bill forbidding fee splitting; also one punishing physicians for signing false statements.

TEXAS

Cult Bills Defeated.—Both the optometrist and chiropractic bills have been defeated.

Measles Must Be Reported.—The attorney general has ruled that, it being a matter of common knowledge that measles is a contagious disease, each case should be reported by the physician in charge to the local health officer in the manner prescribed by the sanitary code.

Personal.—Dr. Cleve C. Nash, Palestine, has been appointed chief surgeon of the International and Great Northern Railway.——Dr. Edmund B. Parsons, March 23, was appointed chief surgeon of the International and Great Northern Railway Hospital at Palestine.——Dr. Kincy J. Scott, assistant city physician of Fort Worth, has resigned to accept a position with the Daughter of the King Hospital.

State Quarantine Station Located.—Dr. William B. Collins, state health officer, accompanied by Lieut.-Col. William J. Barden, C. E., U. S. Army, has gone to Sabine to select the location of the new Texas State Quarantine Station on the Sabine-Neches Canal. An appropriation of $65,000 was made by the last legislature for this station, which will serve the ports of Sabine, Sabine Pass, Port Arthur, Port Neches, Orange and Beaumont.

Licenses Revoked.—The Texas State Board of Medical Examiners reports that on Dec. 6, 1916, the license of Dr. Ella M. Maddix, Dublin, was revoked, on the grounds of drug addiction and for having been convicted of violating the Harrison Narcotic Law, and that on March 13, 1917, for similar reasons the license of Dr. W. F. Gordon, Fort Worth, was revoked. It was also stated that on March 20, 1917, the license of Dr. William A. Link, Fort Worth, was revoked, on the ground of his having been convicted of a felony and sent to the penitentiary.

UTAH

Sectarian Bills Defeated.—The chiropractic bill was killed in the house by a vote of 23 to 20. The drugless healers' bill was killed by the sifting committee, as was the bill requiring health certificates before marriage. Bills regulating doctors' fees, creating a state department of health and amending the medical practice act so as to permit chiropractors to practice were killed in the house by striking out the enacting clause. Practically no public health legislation of any importance was enacted.

WASHINGTON

Governor Vetoes Bills.—A drugless healer bill and an amendment to the medical practice act were both vetoed by the governor.

WEST VIRGINIA

Constructive Laws Passed.—Legislature passed bills establishing a tuberculosis sanatorium for colored people, amending the medical practice act by increasing the requirements for a license forbidding the division of fees and providing for the licensing of chiropodists by the state board of health council.

WISCONSIN

Industrial Service.—The Northern Paper Mills, Green Bay, have established an industrial service department under the direction of Dr. Ralph M. Carter, Green Bay, and a registered nurse. Complete medical and surgical care for employees and their families will be furnished, and a thoroughly equipped dispensary with reading, rest and recreation rooms is under construction.

Septic Sore Throat in Galesville.—The twelfth death from septic sore throat at Galesville occurred, March 22. Physicians of the state board of health have discovered six infected cows in a herd of twenty-six, which supplied milk for Galesville.

Personal.—Dr. Oscar Lotz has been appointed a member of the State Board of Medical Examiners, to fill the unexpired term of Dr. John M. Beffel, Milwaukee.——Dr. Henry C. Werner has been appointed supervisor of the State Institution for Feebleminded Children at Union Grove, Racine County.——Dr. John R. McDill, Milwaukee, who recently returned from Germany, was the guest of honor at a dinner and smoker given by the Press Club, March 24.——Dr. Michael E. Corbett, Oshkosh, entertained the Oshkosh Medical Club and the Winnebago County Medical Association at his home, March 17.——Dr. Max Bornstein has been elected secretary of the Milwaukee County Division of the Medical Reserve Corps, U. S. Army.

CANADA

Drugless Healers in Saskatchewan.—An amendment to the Medical Profession Act is before the legislature of the Province of Saskatchewan. It provides that an applicant for a drugless practitioner certificate must show that he has attended a course of lectures pertaining to his work extending over a period of four years and embracing at least five months of each year, satisfactory evidence of which shall be produced if required.——The council shall also admit every person registered under the osteopathic act at the time of the coming into force of this act: Any person who shall produce to the registrar a certificate under the hand of the registrar of the University of Saskatchewan as having passed satisfactorily the hereinafter mentioned examinations for drugless practitioners: provided that such person shall restrict his practice to the method of treatment cited in his license.

Personal.—Col. John T. Fotheringham, C. M. G., Toronto, is returning to Canada, having been appointed director of Invalid Services in Canada.——Col. Frederick W. Marlow, who resigned the post of A. D. M. S., Toronto Military District, will shortly sail for England, where he will be given an important post in the Canadian Medical Service.——Capt. Edward Ryan, formerly superintendent of the Rockwood Hospital for Mental Diseases, Kingston, Ont., and who has been chief of the psychopathic ward of the Ontario Military Hospital, Orpington, England, will succeed Major Frederick J. Munn as medical officer of the Military Hospitals Commission in the Toronto District.——Lieut.-Col. P. Walter W. McKeown, Toronto, who has been attached to the pension board for nearly two years in England, has left Shorncliffe to become attached to the Kitchener Hospital, Brighton, England.——Dr. William A. Harvie, Regina, Sask., who went overseas with the Saskatchewan Medical Unit, has been appointed a member of the Standing Medical Board.

Hospital News.—The medical staff of the Regina General Hospital are having a memorial tablet placed in a public place in the hospital in memory of the late Dr. John A. Cullum, who was a member of the staff, and who was killed in action in France.——The Saskatchewan Hospital Unit, Stationary Hospital No. 8, is located at Hastings, England.——The number of invalid soldiers now being cared for in Canada by the Canadian Hospitals Commission is nearly 5,000. The convalescents number 3,913, of whom 2,104 are in convalescent hospitals, and 1,809 outpatients. Consumptives number 520, including 193 "camp" men. All but eleven are being treated in special sanatoriums for tuberculosis. Sixty-seven men are in the hospitals for the insane, besides six outpatients, while there are 196 men in ordinary hospitals and other institutions.——The Canadian soldiers in hospitals in the United Kingdom on March 9 numbered 15,060, including 467 officers, and consisted of 9,389 sick and 5,194 wounded; 103 are in tuberculosis institutions.——The Ontario government has increased its grant to the hospitals of the province from $1 per patient per day to $1.20.

GENERAL

Physician Practicing Without License.—It is reported that Godfried Leonhard Hagen-Berger has been found guilty of practicing medicine without a license before the Dade County Court at Miami, Fla., and was sentenced to pay a fine of $50 or to serve ninety days in jail.

Lane Medical Lectures.—The Lane Medical Lectures for 1917 will be delivered by Dr. Simon Flexner of the Rockefeller Institute. During the week beginning Monday, October 8, there will be five lectures and they will be given on consecutive evenings. The subject of the series will be "Physical Basis and Present Status of Specific Serum and Drug Therapy."

National Child Labor Conference.—The thirteenth National Conference on Child Labor closed its session at Baltimore with the firmly established conviction that whatever war measures this country is obliged to adopt, there should be no let-down in the standards for child protection. Forms of child labor to be found in every state in the Union and yet not controlled by the federation law were discussed at some length, and among other subjects, suggestions were made for the codification of all child welfare laws and the need of federal aid to elementary education as the means of equalizing the educational opportunities of children throughout the country.

Public Health Service Personals.—Asst. Surg.-Gen. Henry R. Carter has been ordered to proceed to New Orleans and other places in the southern states to supervise the study of malaria.——Surgs. Joseph W. Schereschewsky, George L. Collins and Frederick C. Smith have been directed to inaugurate an investigation of the textile industry in Philadelphia and vicinity.——Drs. Thomas Parran, Jr., Washington, D. C.; Henry Stoll Mustard, Charleston, S. C.; Joseph Davis Applewhite, Winona, Miss.; John Wilson Tappan, El Paso, Texas; Roy Preston Sandidge, New York; Paul Darwin Mossman, Berea, Ky.; Ralph Chester Williams, Montgomery, Ala.; Julius Stanley Shourds Gardner, Washington, D. C., and Richey Laughlin Waugh were appointed and commissioned as assistant surgeons, March 22.

Bequests and Donations.—The following bequests and donations have recently been announced:

Methodist Hospital, Indianapolis, a donation of $1,500, by Mr. and Mrs. Verling Stanley, Lapel, as a memorial to their only daughter, who died last December.

Pennsylvania Medical Missionary Society, a bequest of $5,000, by the will of Miss Sarah Benners.

St. Christophers Hospital, Philadelphia, a bequest of $3,000, by the will of Marianne Biddle.

Library of the Women's Medical College of Pennsylvania, Philadelphia, the library and the hospital of the Women's Medical College of Philadelphia and the surgical instruments of the late Dr. Pearce Kintzing, Baltimore.

St. John's Riverside Hospital, Yonkers, N. Y., $1,000, and Homeopathic Hospital and Maternity, Yonkers, N. Y., $5,000 in memory of Eva Smith Cochran, by the will of Mrs. Mary Lewin T. Smith.

Columbia University, for the maintenance of the new school of dentistry, a gift of $7,055 from an anonymous benefactor.

Medical School of Columbia University, in memory of her son, Dr. Charles Wood McMurtry, the entire furnishings of his library, valued at $7,000, by Mrs. Clara L. McMurtry.

The Medical School of Columbia University, a donation of 600 volumes, valued at $3,000, by Dr. Frederic S. Lee.

The Medical School of Columbia University, $2,500, for the maintenance of the Coolidge Research Fellowship of Medicine for 1917-1918, by Mrs. Frederick S. Coolidge.

FOREIGN

Social Insurance for Parturients in Italy.—The *Policlinico* states that arrangements have now been made for aid to prospective mothers in wage earning families. They are each to receive 40 lire, about $8. The funds for this are to be provided from a fund to which the wage earner contributes 1 lira annually, the factory owner 1.25, and the state 12 lire. The insurance society makes up the balance to 40 lire at each childbirth.

Deaths in the Profession Abroad.—**G. Argento,** professor of surgery at the University of Palermo, aged 70. He always took a prominent part in public health matters and the hygiene of the hospitals throughout Sicily.——**D. de Sandro,** instructor in special pathology at the University of Naples.——**A. Gordon,** at one time professor of physiology at the University of Havana, but long retired from active practice.——**M. O. Morejon** of Madrid, aged 83. Under his initiative the hospital and dispensary service of Madrid was organized as the Cuerpo Municipal de Beneficiencia and thus first placed on a systematic and sound basis.——**J. Riedinger,** professor of orthopedics at the University of Würzburg, aged 52.

Death of Welander.—Our Scandinavian exchanges bring obituary notices of Edvard Wilhelm Welander, the Swedish authority on syphilis and dermatology in general, aged 77. He was professor of skin and venereal diseases at the University of Stockholm until his retirement on reaching the age limit. He was the first to affirm that inunction courses of mercurial treatment are in reality inhalation courses, and hence that it is possible to dispense with the inunctions if the mercury is inhaled from a surface smeared with it. He had his patients wear a kind of apron over the chest, on which the mercury was smeared. His name is connected with the Welander homes for children with inherited syphilis. He founded the first one on a small scale at Stockholm, and it proved so successful in insuring thorough and systematic treatment for the children and in obviating infection of others that it has been constantly enlarged and others have been founded. There are Welander homes now in Christiania, Copenhagen, Berlin and Vienna.

PARIS LETTER

Paris, March 15, 1917.

The War

RATIONAL USE OF THE SURGEONS, AND FUNCTION OF SURGICAL SQUADS

In a previous letter (The Journal, Feb. 17, 1917, p. 558) I referred to certain changes made in the organization of the surgical department of the army. The undersecretary of state of the military health service has given notice as to what these changes are to be. The new organization proposes to counteract the dearth in the number of surgeons, whose skill and mastery of technic are well known, by (1) making it possible to transport the surgeons with greater facility to places at which there is greatest need for their services, and (2) by forming surgical squads capable of rendering immediately the best of service, no matter where they are called. With this end in view, the undersecretary has decided to surround each surgeon with a staff of especially selected and competent assistants. This group will form a surgical squad or operating unit which may be sent anywhere as a surgical reinforcement. Each squad or unit will be composed of a surgeon and assistant surgeon, an anesthetist and two nurses. The anesthetist is a medical adjutant (lieutenant or sublieutenant), a medical auxiliary (corresponding to the grade of adjutant) or an auxiliary pharmacist. The two special nurses are either medical students or pharmacist students, preferably the former. The assistant surgeon must be not only a competent assistant, but also a capable operator, one who can be placed on his own responsibility with the view of assuming the duties of surgeon of a squad; in other words, he is a surgeon in reserve.

It has been customary to send surgeons here and there to render assistance, but it is quite evident that without the surgeon his aids are useless, and, on the other hand, the output of an operator who is obliged to work with strangers, men who are not familiar with his methods, is greatly diminished. Hereafter, the surgeon and his entire squad will be sent as a reinforcement. These squads will always be mobilized in the sense that immediately on receipt of a request for their assistance they will be conveyed either by railroad or by automobile, by the shortest possible route, and as quickly as possible, to the place from which the call came. After its work has been done, the squad rejoins the sanitary formation of which it is ordinarily a part. In its own territory the function of the squad varies according to the degree of activity. Sometimes this activity is intense because the nearest hospitals may be filled by recently wounded, thus necessitating such extra assistance as the squad may render. The regional director of the health service may detach the surgical squad from its place, and transport it at once to a place which is at that time swamped with work. This squad proceeds from place to place serving as a surgical reinforcement wherever it is needed. If the services of the squad are not in demand in its own immediate territory, the director of the region advises the undersecretary of state to that effect so that the disengaged squad is available for service in some other region or district. When the squad is again at liberty it returns to its original station awaiting further call. At the same time that the surgical squads are so retired, their services may be utilized: (1) by being assigned to the service of one or more hospitals with but one surgeon on the station; (2) by combining the services of two or more hospitals into one, or (3) by closing the entire hospital temporarily. At the same time that these surgical squads are called on for reinforcements, their surgical services, in a state of great activity, are extended by the application of measures opposite to the preceding ones. Such an elastic organization of the surgical service will have for effect the possible mobilization of the surgical squads: (1) within the limits of one region (on the initiative of the director of the region), or (2) from one region to another (on the order of the undersecretary of state).

TREATMENT OF WAR WOUNDS BY MAGNESIUM CHLORID

In the course of the military operations on the Somme, Dr. Guillaume-Louis personally took care of more than 1,200 severely wounded in the surgical automobile ambulances. He communicated the results of his study to the Society of Surgery of Paris. On the arrival of the wounded he always employed the same treatment, which was as follows: Removal of all foreign bodies and necrotic tissue; disinfection with ether. After the first time he made use of various therapeutic measures, but experience led to his preferring magnesium chlorid. He did not use any drains. Instead, he places in the wound a wick which soaks up the solution. On the surface he applies a compress saturated with the same solution. The dressing is renewed every day with the greatest possible aseptic precautions. Rapidly, under the influence of magnesium chlorid, the wound is cleansed, the pathogenic agents are diminished in number, and the secretions are dried up. In the course of a few days the wound is disinfected sufficiently so that it can be sutured for secondary union. Guillaume-Louis has employed other methods of dressing with good results, such as Labarraque's solution, oxygenated waters, neutral solution of chlorinated soda (Dakin's solution) and magnesium hypochlorite, but he has not obtained the same satisfactory results from any of these as from the use of magnesium chlorid. Delbet believed that he had demonstrated several times that neutral solution of chlorinated soda is not as harmless as it is said to be; that while it may not alter the tissues themselves it does alter the leukocytes and transforms the albumin of the exudate so as to make it a good culture medium for bacteria.

THE TAX ON SACCHARIN

The government proposes to limit the use of saccharin to certain pharmaceutical products temporarily employed in the manufacture of foods. The minister of finance has estimated that under these conditions the consumer of saccharin was not to be exempted from the payment of the tax which he has paid heretofore on sugar. As saccharin possesses a sweetening power from 400 to 500 times greater than that of cane sugar, the minister of finance fears that under these circumstances concentrations of saccharin may be used in spite of the regulations within which such use is to be confined or limited. Therefore it is proposed to place a tax on saccharin corresponding to that placed on sugar, which was placed at 200 francs ($40) per kilogram.

THE STUDENTS OF THE VAL-DE-GRÂCE

A decree has been issued recognizing the public utility of the friendly society of the students and former students of the school for the application of military medicine and pharmacy of Val-de-Grâce. Henceforth, that society, which numbers 800 members, will be permitted to receive donations and bequests. The society will aid the widows and orphans of those of its members who have succumbed in the course of the war (580 members have died since the beginning of hostilities). The treasurer is Médecin-Major Fasquelle, rue Ballu, No. 8, Paris.

Association News

THE NEW YORK SESSION

Time for Reservations in Scientific Exhibit Extended

In order that all members of the Association having interesting material for the Scientific Exhibit may have an opportunity to present it, the time for closing reservations for space for the Scientific Exhibit for the New York session has been extended to May 1. Space has been assigned to all those from whom applications have been received. As there is only a small amount of space left, all those desiring to make an exhibit should make application at once. The Belvedere or Summer Garden on the top floor of the Hotel Astor has been reserved for the Scientific Exhibit. This beautiful hall has been divided into spaces averaging 12 by 6 feet. Wall space is also available for displaying charts, tables and photographs. All the remaining space will be assigned, May 1. For application blanks and further information address the Director of Scientific Exhibit, American Medical Association, 535 North Dearborn Street, Chicago.

First Announcement of Special Train

For the accommodation of those going to the annual session of the American Medical Association in New York, June 4-8, 1917, the Michigan Central Railroad will operate an "American Medical Special" leaving Chicago from the Central Station, Twelfth Street and Michigan Avenue, at 5:40 p. m., Saturday, June 2.

This will be an all Pullman train, consisting of club car, standard and compartment sleepers, observation car and dining cars. The train will make intermediate stops on the Michigan Central at Kalamazoo, Battle Creek, Jackson and Detroit, and is scheduled to arrive in Niagara Falls at 6:10 a. m., June 3, where cars may be occupied until 8 a. m. The entire day may be spent visiting the various points of interest at Niagara Falls. Arrangements will be made with one of the principal hotels to serve breakfast, luncheon and dinner. The special train will leave Niagara Falls at 7:20 p. m., June 3, to arrive in New York at 7:50 a. m., June 4.

If some of the party wish to make the trip down the Hudson River from Albany to New York via the Hudson River Day Line boat, sleepers will be attached to the special at Niagara Falls and dropped at Albany on arrival of the train at that point early Monday morning, June 4. Those in this party can leave Albany via boat at 8:30 a. m., arriving in New York at 5:30 p. m.

The advantages of these special arrangements are many. They permit leaving Chicago at the close of the business day on Saturday, spending an entire day at Niagara Falls, and arriving at New York Monday morning in ample time for the meeting, without payment of excess fare. Those desiring to use the special from Chicago going through to New York direct without stopover at Niagara Falls can do so, arriving New York 5:35 p. m., June 3, by paying an excess of $5. For more detailed information consult any agent of the Michigan Central or write directly to Mr. Fred. E. Deal, C. P. A., 228 S. Clark Street, Chicago.

Marriages

Hugh Todd Ryan, M.D., Schuylkill Haven, Pa., to Miss Mary E. Standiford of Uniontown, at Philadelphia, March 28.

Grace Ottolee Doane, M.D., Des Moines, Iowa, to Mr. Leo L. Crowl of Des Moines, at Osceola, Iowa, April 8, 1916.

Clyde Ferdinand Loy, M.D., Shawnee, Okla., to Miss Katherine Ormsby of Louisville, March 26.

David Nathaniel Kremer, M.D., to Miss Minnie K. Gabouvitz, both of Philadelphia, March 25.

William Park Mills, M.D., to Mrs. Alice W. MacLeod, both of Missoula, Mont., March 25.

Robert Sonnenschein, M.D., to Miss Flora Kieferstein, both of Chicago, April 5.

Deaths

Augustus White Stinchfield, M.D., Rochester, Minn.; Medical School of Maine, Brunswick, 1868; aged 74; formerly a Fellow of the American Medical Association; one of the founders of the Olmsted County Medical Society; a veteran of the Civil War; president of the First State Bank of Rochester and also of the Eyota and Dover State banks and Rochester Loan and Trust Company; died at his home, March 15, from cerebral hemorrhage.

Walter Bayne Geikie, M.D., Toronto, Ont.; Medical Board of Upper Canada, 1851; Jefferson Medical College, 1852; University of the Victoria College, Coburg, Ont., 1859; L.R.C.P. (Lond.), 1867; L.R.C.S. (Edin.), F.R.C.S. (Edin.), 1867; aged 86; dean of the Trinity Medical College, Toronto, for twenty-five years; a member of the Ontario Medical Council; died at his home, January 12, from senile debility.

Frank Carothers Wilson, M.D., Louisville, Ky.; University of Virginia, Charlottesville, 1867; aged 75; formerly a member of the Kentucky State Medical Association, and professor of chest diseases, physical diagnosis in the University of Louisville, Ky., and lecturer on hygiene and dietetics; a Confederate veteran; died at the home of his sister in Dunedin, Fla., March 22, from arteriosclerosis.

John S. Van Voorhis, M.D., Belle Vernon, Pa.; Jefferson Medical College, 1847; aged 93; formerly a member of the Medical Society of the State of Pennsylvania; first secretary of the Washington County (Pa.) Medical Society; one of the organizers of the first railway in the Monongahela Valley; a member of the state legislature from Washington County in 1855; died at his home, March 15.

Evelyn Baldwin, M.D., Rochester, N. Y.; Women's Medical College of the New York Infirmary, New York, 1892; aged 56; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of New York; for many years a member of the staff of the Rochester General Hospital; died at her home, March 24, from pneumonia.

William van Eman Riddle, Burgettstown, Pa. (license, Washington County, Pa., 1881); aged 77; for fifty-three years a practioner; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania, and once president of the Washington County Medical Society; died at his home, March 25.

William Edward Vest, M.D., Des Moines, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1878; Jefferson Medical College, 1880; aged 61; a Fellow of the American Medical Association, and one of the leading surgeons of Des Moines; died in his apartment in Des Moines, March 22, from meningitis following an acute otitis media.

John Norton Pascoe, M.D., Denver; Northwestern University Medical School, Chicago, 1880; aged 65; formerly a Fellow of the American Medical Association; a member of the Colorado State Medical Society; for many years a practitioner and mining prospector of Silverton, Colo.; died in St. Joseph's Hospital, Denver, March 7.

Albert Morrall, M.D., Wamego, Kan.; Rush Medical College, 1867; aged 87; an officer in the Confederate Service during the Civil War; assistant surgeon for the Union Pacific System at Wamego, and from 1894 to 1898 postmaster; died in the University Hospital, Kansas City, Mo., March 4, after a surgical operation.

John Kline Seaman, M.D., Reading, Pa.; Bellevue Hospital Medical College, 1869; aged 72; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; for several years a member of the medical staff of St. Joseph's Hospital; died at his home, March 12.

Miles Nelson Newman, M.D., Ossian, Ind.; College of Physicians and Surgeons, Keokuk, Iowa, 1870; aged 73; formerly a Fellow of the American Medical Association; a veteran of the Civil War; for eight years trustee of Jefferson Township, Wells County, Ind.; died at his home, March 26, from heart disease.

Lewis Garibaldi Langstaff, M.D., Thorne Hill, Toronto, Ont.; Victoria University, Coburg, Ont., 1884; aged 57; formerly a Fellow of the American Medical Association, and adjunct physician to St. John's Hospital, Brooklyn; a veteran of the Spanish-American War; died at his home, March 16, from brain tumor.

Theodore Ilg, M.D., St. Louis; Marion-Sims Medical College, St. Louis, 1894; aged 40; formerly a member of the

Missouri State Medical Association; whose license was revoked five years ago on account of conviction for illegal practice; died, March 20, at the St. Louis City Hospital, from kidney disease.

Joseph Francis O'Shea, M.D., Lynn, Mass.; New York University, New York, 1886; aged 53; a member of the Massachusetts Medical Society; a member of the surgical staff of the Lynn Hospital; assistant medical examiner for Essex County; city physician of Lynn; died at his home, March 29.

Henry Mortimer Brush, M.D., New York; New York University, New York, 1862; aged 80; secretary of the Alumni Association of his alma mater from 1867 to 1870; surgeon of the Fourth New York Volunteer Field Artillery during the Civil War; died in Hahnemann Hospital, New York, March 28.

William G. Winder, M.D., Philadelphia; Jefferson Medical College, 1869; aged 69; a Fellow of the American Medical Association; formerly physician to the Convent of the Sacred Heart, Torresdale, Pa., and the Edwin Forrest Home, Holmesberg, Pa.; died at his home, March 26, from neuritis.

Anna S. Rosenbluth, M.D., Paterson, N. J.; Women's Medical College of the New York Infirmary, New York, 1894; identified with the Jewish hospital work in the United States; superintendent of the Zion Hospital, Brooklyn; died in that institution, March 30, from cholecystitis.

George Baker Underwood, M.D., Gardner, Mass.; Dartmouth Medical School, Hanover, N. H., 1882; aged 62; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; died at his home, February 2, from tuberculosis.

Charles Frederick Denny, M.D., St. Paul; Harvard Medical School, 1882; aged 59; a Fellow of the American Medical Association; for many years a member of the staff of the St. Paul City and County Hospital; died in Los Angeles, March 24, from heart disease.

Oscar Newton Carter, M.D., Republic, Mo.; University of the South, Sewanee, Tenn., 1899; aged 42; formerly a Fellow of the American Medical Association; a member of the Missouri State Medical Association; died in his office, March 27, from cerebral hemorrhage.

Arthur Vinol Lyon, M.D., Brockton, Mass.; Harvard Medical School, 1887; aged 53; a member of the Massachusetts Medical Society; a member of the visiting staff of the Brockton State Hospital; died at his home, February 21, from cerebral hemorrhage.

Thomas Edward Cunningham, M.D., Cambridge, Mass.; Harvard Medical School, 1883; aged 66; a Fellow of the American Medical Association; a specialist on internal medicine; died at his home, February 27, from carcinoma of the right lung.

Wallie C. Lane, M.D., Mountain Grove, Mo.; University Medical College of Kansas City, Mo., 1898; aged 42; died in Springfield, Mo., March 13, from the effects of a gunshot wound, self-inflicted, with suicidal intent, while mentally deranged.

Richard Hastings Dillon, M.D., Manchester, N. H.; College of Physicians and Surgeons, Chicago, 1897; aged 48; formerly a member of the New Hampshire Medical Society; at one time a medical officer in the state militia; died at his home, recently.

J. D. McNeiley, M.D., Sewal, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1886; aged 65; while returning from a professional call, March 9, sustained a fracture of the spine by the overturning of his automobile, and died six hours later.

William A. Hunt, M.D., Evansville, Ind.; Missouri Medical College, St. Louis, 1891; aged 75; a member of the Indiana State Medical Association; a practitioner for forty-five years; died at his home, February 23, from bronchial pneumonia.

George Francis Adye, M.D., Newtonville, Ind.; Cincinnati College of Medicine, 1865; Eclectic Medical Institute, Cincinnati, 1870; aged 79; a member of the Indiana State Medical Association; died at his home, February 7.

Columbus A. Cox, M.D., Stanford, Ky.; University of Louisville, Ky., 1860; aged 81; surgeon of U. S. Volunteers during the Civil War; died at the home of his son in Jonesboro, Tenn., Februrary 2, from senile debility.

Arthur von Werder, Chicago (license, Illinois, 1889, on certificate from War Department, Russia, 1883); aged 75; a practitioner since 1859; died at his home, March 23, from cerebral hemorrhage.

Isaac Crowther, M.D., Chester, Pa.; Hahnemann Medical College, Philadelphia, 1880; aged 59; a member of the medical staff of the J. Louis Crozier Hospital, Chester; died at his home, March 21, from heart disease.

George Clark Blaisdell, M.D., Contoocook, N. H.; Harvard Medical School, 1867; aged 72; a Fellow of the American Medical Association; local surgeon for the Boston and Maine System; died at his home, March 5.

J. Albert Mattson, M.D., Chisago City, Minn.; University of Minnesota, Minneapolis, 1904; aged 42; a member of the Minnesota State Medical Association; died suddenly, March 18, from postpharyngeal abscess.

Philip G. Foust, M.D., Somerset, Ind.; Medical College of Indiana, Indianapolis, 1895; aged 44; formerly a Fellow of the American Medical Association; died at his home, February 21, from pneumonia.

H. W. Heasley, M.D., Grand Rapids, Mich.; Detroit College of Medicine and Surgery, 1893; aged 54; a member of the Michigan State Medical Society; died at Harper Hospital, Detroit, March 14.

Justus Crosby French, M.D., Webster, S. D.; Harvard Medical School, 1875; who retired from practice about twenty-five years ago; died in a hospital in San Diego, Calif., March 6, from pneumonia.

Charles S. Macy, M.D., New York; New York Homeopathic Medical College, New York, 1881; aged 67; for many years instructor in obstetrics at the Flower Hospital; died at his home, March 15.

William C. Campbell, M.D., Creighton, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1881; a member of the Nebraska State Medical Association; died in Omaha, February 6.

David Kline Bond, M.D., Waterloo, Iowa; State University of Iowa, College of Homeopathic Medicine, Iowa City, 1904; aged 51; died at his home, March 14, from uremia.

J. C. Iserman, Topeka, Kan. (license, Kansas, 1901); aged 79; for more than half a century a practitioner of Kansas; at one time postmaster; died recently in Florida.

A. C. Brabsan, Otto, N. C. (license, North Carolina); aged 77; for more than fifty years a practitioner of Rabun County, N. C.; died at his home near Otto, March 7.

Walter Estus Deuel, M.D., Chittenango, N. Y.; New York Homeopathic Medical College, New York, 1876; aged 64; died at his home, March 5, from pneumonia.

Francis James Hogan, M.D., St. John, N. B.; Harvard Medical School, 1908; aged 34; formerly of Bridgeport, Conn.; died at his home, March 8, from pneumonia.

William H. Hornor, M.D., Duck Creek, W. Va.; Eclectic Medical College, Cincinnati, 1865; aged 76; died at his home, February 11, from bronchial pneumonia.

Jasper P. Norcross, Miller, Neb. (license, Nebraska, 1902); aged 66; a practitioner and druggist of Buffalo County, Neb., since 1884; died at his home, March 19.

G. T. Hale, M.D., Junction City, Ark.; American Medical College, St. Louis, 1876; aged 82; died at the home of his daughter in Junction City, recently.

Samuel G. Miller, M.D., Livermore, Pa.; Western Reserve University, Cleveland, 1867; aged 88; died, March 15, at the home of his son in Blairsville, Pa.

Andrew Glass Gorrell, M.D., Ossian, Ind.; State University of Iowa, Iowa City, 1875; aged 76; a veteran of the Civil War; died at his home, March 20.

Amplias Alonzo Hurt, M.D., Hickory, Ky.; Hospital College of Medicine, Louisville, 1876; aged 66; died at his home, February 10, from pneumonia.

Joseph W. Baker, M.D., Louisa, Va.; Medical College of Virginia, Richmond, 1864; a Confederate veteran; died at his home, March 14.

Sidney J. Burch, M.D., Rhineland, Mo.; Washington University, St. Louis, 1877; aged 61; died at his home, March 4, from diabetes.

John Cameron, M.D., Wheelock, Texas; Tulane University, New Orleans, 1860; aged 91; died at his home, Ferbuary 19, from cystitis.

Andrew J. Carper, M.D., Elkhart, Ind.; Medical College of Fort Wayne, Ind., 1882; aged 71; died in his office, March 20.

Michael J. Donnelly, M.D., Summithill, Pa.; Rush Medical College, 1869; aged 78; died at his home, March 13.

Correspondence

Dr. C. A. L. Reed and the Etiology of Epilepsy

To the Editor:—I cannot but feel that the letter of Dr. Charles A. L. Reed (The Bacteriologic Phase of Chronic Convulsive Toxemia [Epilepsy] of Intestinal Origin, The Journal, Feb. 24, 1917, p. 652) deserved a more important place than it received. Although over a month has passed since its publication, it seems to have attracted the attention of comparatively few readers. This article, to my mind, is the most important that Dr. Reed has published, notwithstanding the fact that he has, as yet, failed to appreciate that heredity and gross brain lesions do occasionally play some part in the production of epilepsy.

He apparently has come to the point at which he appreciates that negative findings have a certain definite value, which view no one would have accused him of possessing when he closed his article published in The Journal, Oct. 14, 1916, by stating, "as such I, like other clinicians, must be guided by the technical findings of pathologists and bacteriologists, but they must be findings of something, not of nothing." To this statement I would say that there is no field of research work in which finding "things" is easier than it is in bacteriology. Surroundings and technic play quite as important a part in bacteriology as heredity and gross brain lesions do in epilepsy.

I fail to see where Dr. Reed has added one thing of importance to the literature on epilepsy. All that he has written has been generally accepted for years, and the surgical aspect of the treatment of the toxic cases was reviewed by Dr. Ernest LaPlace, professor of surgery at the Medico-Chirurgical College, Philadelphia, years ago. What he has done by his premature publications has been to fill the general practitioner, who depends on the research laboratories as a source of information, with doubt and misgiving.

D. A. Thom, M.D., Worcester, Mass.
Assistant Pathologist, Massachusetts Commission on Mental Diseases.

Pennsylvania and Entrance Conditions

To the Editor:—I am enclosing a resolution which I would ask that you publish in The Journal.

J. M. Baldy, M.D., Philadelphia.

Whereas, In 1914 certain "conditions" in the preliminary sciences were permitted by the Association of American Colleges, to terminate September, 1917, and

Whereas, Said Association of American Colleges during its meeting in Chicago, February, 1917, extended these "conditions" for a further period of time, therefore, be it

Resolved, That the Bureau of Medical Education and Licensure of the State of Pennsylvania hereby registers its protest against such action and announces that approval will be refused any candidate applying to enter Pennsylvania either through examination or through reciprocity with any condition of any kind after September, 1917. And it is further

Resolved, By the said bureau, that it will remove from the approved list of the State of Pennsylvania the name of any medical college allowing any conditions on the preliminary requirements after September, 1917.

[Note.—The foregoing communication was referred to the secretary of the Council on Medical Education of the American Medical Association, who says:

These preambles and resolutions need a word in correction. The rules in regard to conditions were prepared in 1915 by a joint committee representing the Council on Medical Education of the American Medical Association and the Association of American Medical Colleges, after an extensive correspondence with leading medical educators. Those conditions were to be allowed, meanwhile, until Jan. 1, 1917, after which time they were to be either discontinued or continued, as might be determined at the next annual meetings of the two associations. By a further understanding the rules with certain modifications were extended to Jan. 1, 1918. Under the present arrangement the student is permitted to enter the medical school conditioned in four semester hours of *either* physics or biology but not in both. No condition is to be allowed in chemistry, and high school physics is no longer to be accepted in lieu of college physics. The committee representing the two organizations believe that the rapid but very desirable advances which are being made in preliminary education will work undue hardship on a large proportion of students unless such conditions were allowed. After a few years have been allowed for readjustments under the higher standards, it may then be found reasonable to insist that students enter the medical course without conditions. In the meantime, it is believed that to allow certain deserving students to carry a four semester hour condition will not handicap such students in their medical course.]

An Unmulish Trick!

To the Editor:—I wish to report an extremely rare and interesting observation: March 4, 1917, at the farm of Mr. T. B. Neely, Peoria, Ariz., I saw an iron gray mare mule, 4 years old, 15½ hands high, and weighing 1,100 pounds, suckling a male colt to which she had given birth two months previously. The owner, Mr. Neely, informed me that the mother was raised by him, and he knows her to be a true hybrid. She has this appearance to me, and in no way resembles a jennet. He further stated that, at the time conception evidently occurred, this mare mule was confined in a pasture with a large sorrel stallion, and the act of copulation between the two animals was repeatedly observed. As pregnancy, naturally, was unsuspected, the mare mule was worked at her usual task on the plow until immediately before the birth of the colt. The colt is of good size, vigorous and healthy, and eagerly suckles. Its feet, ears and head have the appearance of those of a mule, the ears and head, however, being unusually long. The shape of the body more nearly resembles that of a horse. Its color is sorrel or light bay. These facts can be authenticated by the owner.

Ray Ferguson, M.D., Patagonia, Ariz.
Chairman, Committee on Public Health and Vital Statistics, Arizona State Senate.

The Clarification of Milk

To the Editor:—In The Journal, March 24, 1917, Prof. E. G. Hastings of the University of Wisconsin presents his views concerning the clarification of milk. They are distinctly hostile to this process, and leave the impression that the use of a clarifier not only encourages sloppy methods at the point of production, but that health officers favoring the process are deceiving the public. Cincinnati and five other cities are cited as examples of the lengths to which misguided enthusiasts will go in an endeavor to supply a community with milk that is not only safe but decent in appearance.

Cincinnati health officials have never suggested that clarification is a substitute for cleanliness at the point of production. They do believe that it is a very efficient adjunct to cleanliness. The material removed will do more to open the eyes of a careless dairyman to his shortcomings than many hours of eloquent appeal. Seeing is believing. The Cincinnati Department of Health has not passed a regulation requiring clarification.

Professor Hastings admits that, "under ordinary conditions, more or less dirt of an insoluble nature gets into the milk," and that strainers are used for the purpose of eliminating a portion of it at the point of production. He failed to include the soluble material that constantly gets into milk. Microscopic and macroscopic examination of milk sediment reveals the presence of an occasional blood clot, hairs, cow manure, pus cells, bacteria and other flotsam and jetsam of the dairy industry. These inclusions occur in the product of the best regulated dairies, in spite of the greatest precautions taken to exclude them.

The question naturally arises, If it is a good thing to eliminate a portion of the foreign material by straining at the point of production (a process which he does not condemn), why is a method that removes all of it open to condemnation? Clarification will not neutralize the danger of infection that may reside in unpasteurized milk. It is immeasurably superior to the ordinary methods of straining employed on dairy farms. If efficiency in performing this function is to be the measure of condemnation, and if the degree of condemnation is to be proportionate to the degree of efficiency, then the advocates of clarification should be sentenced to service in a diet squad created for the purpose of solving the high cost of living. Clarification (perfect straining) removes all visible sediment. If this is bad practice, why is partial removal by imperfect straining good practice?

Reasoning backward, all methods of straining should be discontinued, for the more perfect they are, the more reprehensible they become. The covered milk pail should be abolished because it excludes dirt that would be included "under ordinary conditions," and cleansing the cow becomes one of those finicky ideas which, if carried out, prevents the consumer from knowing just how dirty a sample of milk may be "under ordinary conditions." People naturally object to having milk served to them wearing a flowing beard or a toupee or sadly in need of a haircut, and clarification confiscates all of the hirsute appendages found in milk produced "under ordinary conditions." We might go a step farther and include the cow manure that gave milk its body, bouquet and delectable flavor in the good old days before dairy inspectors got busy.

Experience has taught me that the happiness of the consumer is not increased when he finds the foreign material that escapes the strainer at the point of production. Following the lead suggested by Professor Hastings, practically every bottle of milk would show visible sediment, little if any of it having any direct effect on health, but a positive effect on appetite, and, therefore, indirectly on health.

Furnishing a safe milk does not, in my humble judgment, end the responsibility of a public health official. It must also make a decent appearance and an appeal to appetite. To fill these requirements, it must be produced in clean dairies by clean milkers, cooled quickly, shipped in sterile containers, pasteurized, *clarified* and delivered to the consumer in sealed packages.

J. H. Landis, M.D., Health Officer, Cincinnati.

[Dr. Landis' letter was referred to Professor Hastings, who replies:]

To the Editor:—The rules and regulations which are passed by the health departments of our various governmental units, whether they be municipal, state or federal, should have some actual relation to health problems; whenever a health department is instrumental in the passage of regulations that have no relation to public health it is in truth deceiving the public. It seems to me perfectly true that any city which passes an ordinance requiring the clarification of milk or any health department which passes such a rule is leading the public astray. I should not say that the clarification of milk encourages sloppy methods, but I do think that it may permit the use of methods which could not otherwise be used.

The statement made in the article concerning the cities that have passed ordinances requiring clarification was based on what I supposed to be reliable information. I certainly regret having included Cincinnati in this list since this city has made no such requirement.

I think an inference has been drawn from the article that is not wholly justifiable, namely, that it is a good thing to eliminate a portion of the foreign matter by straining at the point of production. I did not condemn this process because, as it seems to me, it is such an ingrained custom of the American farmer that it will be many years before we can hope to prevent him from straining the milk. I do, however, believe that if this process could be eliminated it would have an immense value in inducing cleanliness. A beginning is being made in this work. The inspectors of the New York City Board of Health have found in their work at the various milk receiving stations that the dirt test becomes of little value to them as soon as the farmer applies efficient methods of straining the milk. The officials have apparently begun to consider whether it would not be a wise thing to prohibit the straining of milk on the farm. For many years this has been a custom in certain of the milk-producing districts of Switzerland, not only for milk that is to be used as market milk, but also for milk to be used in the manufacture of cheese. This custom has been brought to this country by some of the Swiss cheese makers. They realize that they can tell far more concerning the methods which the farmer is using in the production of the milk if he does not strain the milk than if he does. I desire to correct the impression which I apparently have made: that I believe that partial removal by imperfect straining of milk is a good practice. I do not think, however, that any city needs to pass an ordinance requiring that the farmers shall strain the milk.

In one other paragraph of Dr. Landis' letter he seems to have confused prevention of the introduction of dirt into milk with its removal. It is well known that the bacteria which are introduced with the mud and manure that get into milk are largely washed from the solid materials with which they were in contact. When these microscopic objects are strained from the milk the bacteria are not likewise removed but remain in the milk. The bacteria are certainly the agents that are instrumental in causing the spoiling of milk, and in many cases influence its healthfulness. The removal of the carrying agent but not the bacteria cannot improve the healthfulness of the milk. I suppose if an agar culture of the typhoid organism were introduced into a vat of milk and allowed to remain until all of the organisms had been washed off and then if the agar on which the bacteria were carried was removed from the milk, we should have something quite comparable to what we actually have in the straining of milk. This certainly would be very different from preventing the introduction of the culture into the milk. The covered milk pail prevents the introduction of dirt with its adherent bacteria. The cleaning of the animal and every other process that prevents the introduction of foreign matter into the milk are certainly to be recommended, but the removal of what we may call the inert agent and leaving the active agent behind can be of little value to the milk consumer other than from purely esthetic grounds.

The largest milk company in the state of Wisconsin has been and still is, I believe, using a very simple straining device. This device costs the company but little to make and nothing for its operation. It apparently does for this company what very much more expensive processes are doing for other companies, and it enables that company to handle milk at a lower margin than would otherwise be the case. It certainly shows that clarification of milk is not an essential factor in the happiness of the consumer.

E. G. Hastings, Madison, Wis.

Why I Do Not Favor Compulsory Health Insurance

To the Editor:—I do not favor compulsory health insurance:

1. Because it would destroy the personal relations that have always existed between physician and patient.
2. Because it would reduce the rank and file of a learned and respected profession to the level of wage earners.
3. Because it is nothing more or less than lodge or contract practice on a universal scale, and this has proved by experience to be an unmitigated evil; unsatisfactory from the standpoint of both physician and patient.
4. Because, specious arguments of its advocates notwithstanding, compulsory health insurance has *not* been the means of lowering the mortality rate of any country in the world, for it has been reduced as greatly in those countries that have no state or industrial insurance system as it has been in those that have compulsory health insurance.
5. Because it is pure socialism, and if such medical service is enforced by laws there is no reason why we should not have compulsory insurance for feeding, clothing, sheltering and providing employment for the same classes, as their health depends as much on proper feeding, clothing, shelter and employment as it does on proper medical attention.
6. Because the problems that have given rise to the agitation for compulsory health insurance are not medical problems at

all, but purely economic ones, and with a living wage paid by employers to the workers they will be satisfied, and in a position to pay their own bills, medical and otherwise, without aid from the state or any other source.

7. Because it is complicated, adjusted to the peculiarities of European conditions, and would be practically impossible to harmonize with American institutions and ideals.

8. Because the rank and file of the medical profession, reduced from an independent position to the condition of employees working for a corporation, would be as underpaid and dissatisfied as are other wage earners, and this state of affairs would not conduce to the advancement of medicine or redound to the benefit of those under their care.

9. Because the healthy rivalry now existing among physicians to give increasingly efficient service to their patients in order to gain and to hold practice would cease, as no physician would gain anything by increasing his efficiency.

10. Because the meetings of medical societies now devoted to the discussion of scientific subjects would become sessions of debate concerning matters pertaining to the workings of compulsory health insurance to the exclusion of those scientific subjects, the undisturbed consideration of which is necessary for our advancement and learning.

11. Because neither capital, organized labor, the state nor the medical profession desire to have a revolutionary upheaval at the present time, or in fact at any time.

12. Because it would enslave, burden and belittle all parties to it, especially the wage earner and the physician, would completely commercialize the latter, and ring the death knell of medicine as a humanitarian calling.

13. Because it would be a nightmare with no awakening.

14. Because, from the standpoint of sentiment in the United States of America, it is a fad of the hour, akin to universal twilight sleep, the setting of the clock an hour ahead, and other sick minded efforts to change the things that are.

15. Because nobody really wants it, it being a self-evident fact that, like everything else, cheapening medical service means lowering its quality, and no person in this country need suffer from lack of medical attention and care, as those too poor or too improvident to pay are at all times accommodated in hospitals or other institutions; and because compulsory health insurance does not in Europe, and cannot here, either prevent disease or accident or drive a lazy, malingering or chronically sick individual to work.

Ralph S. Cone, M.D., Westwood, N. J.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

INSTRUCTION IN FIRST AID

To the Editor.—If you have a manual suitable for the use of a first aid class, kindly send me a copy on approval.

Charlotte B. Gardner, M.D., Cumberland, Md.

To the Editor.—Have you any articles or booklets which would be suitable to use in instructing, through lectures and demonstrations, a large class of women in first aid? If you do not publish any, will you refer me to some that are approved for such use by the American Medical Association?

Eva M. Locke, M.D., Nashua, N. H.

Answer.—The American National Red Cross publishes a woman's edition First Aid book, price, 30 cents, which can be secured from most booksellers, and which is used as a textbook in connection with courses in First Aid to the Injured by the American Red Cross. When instructing men it is requested that particular attention be given litter bearer work and other transportation methods in order that they may, after taking the First Aid course, be partially prepared for service in any Red Cross organizations that may be formed for the purpose of assisting the armed forces of the United States in time of war.

The First Aid course for women is intended only to teach them what they can do when accidents and sudden illnesses occur within their own homes or elsewhere, and is not, except that they have added to their general information, expected to qualify or accepted as qualifying them for service with the Red Cross in time of war. Women who desire to prepare themselves for war service should write to the "Division of Instruction for Women" of the American Red Cross, Washington, D. C., which offers courses in "Elementary Hygiene and Home Care of the Sick," "Dietetics" and "Preparation of Surgical Dressings."

While it is recommended that women take instruction in First Aid with the belief that it will be a valuable asset to them in their everyday lives, the American Red Cross states that such instruction does not fit them for service in time of war because the Red Cross is not, except in great emergency, allowed to operate in the zone of the advance (front).

The following has been suggested as a series of lectures on First Aid:

1. Shock, use of bandages, triangular bandage, four tail bandage, etc.
2. Fractures.
3. Fractures and review of previous work.
4. Wounds.
5. Bleeding and review of previous work.
6. Insensibility and poisoning.
7. Drowning, choking, etc.; artificial respiration.
8. Review.
9. Removal of patient; home preparations.
10. Review.
11. Examination.

One and one half hours is devoted to each subject. A lecture is given which is usually followed by practical demonstrations in which one member of the class uses another as a patient. The practical work is thus linked with the theoretical.

VENEREAL PROPHYLAXIS UNIT

To the Editor:—Where can I find a description for the preparation of a venereal prophylaxis as is used in the Army?

H. H. Farkas, M.D., York, Pa.

Answer.—According to the manual for the Medical Department of the Army, 1916, the venereal prophylaxis unit contains the following articles:

3	enamel-ware basins
200	sheets form 77, medical department
1	glass graduate, 120 c.c.
350	tablets hydrargyri chloridum corrosivum; 1 tablet in 500 c.c. of water makes a 1:1,000 solution
200	ampules of protargol, 2 gm. in an ampule.
2	cakes Ivory soap
4	boxes gauze sponges, 1 dozen in a box
4	penis syringes
12	hand towels
4	bottles unguentum hydrargyri chloridi mitis, 30 per cent., ½ pound in each bottle.

This is packed in a pine box with a hinged lid. The weight of the outfit is 45 pounds. A list of contents and directions for administering the prophylactic treatment are pasted on the inside of the cover.

One outfit of this character is supplied to each evacuation hospital, base hospital or medical reserve unit. A medical reserve unit is a collection of medical supplies which it is estimated will meet the immediate requirements of a reserve for one infantry division.

VALUE OF "STERLING VIOLET RAY GENERATOR" IN THERAPEUTICS

To the Editor:—I am curious to learn the value of the violet ray in the treatment of disease. The violet ray seems to be much in evidence in Canada at the present time in various towns. It is well advertised, not in the same way as a "patent medicine" would be, but as a genuine form of treatment. The enclosed booklet gives a brief outline of what the agents for the "Sterling Violet Ray Generator" claim it will do. The reason I am troubling you about this matter is that I feel if there is anything in it as is claimed, it should be better known. It also seems that if this treatment is not capable of doing what is claimed for it, it is a rather serious thing for a person who may defer calling a physician.

J. A. G.

Answer.—The "Sterling Violet Ray Generator" is a small high frequency apparatus with some vacuum and possibly other electrodes. There is a violet color in these vacuum electrodes when they are energized. The apparatus is not one for producing violet or ultraviolet rays in the scientific meaning of those words. The apparatus certainly will not do the things claimed for it in the booklet which include the treatment of practically every ailment known to mankind.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Little Rock, May 8-9. Sec., Dr. T. J. Stout, Brinkley, Ark.

Arkansas, Eclectic: Little Rock, May 8. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

Arkansas, Homeopathic: Little Rock, May 8. Sec., Dr. Scott C. Runnels, Little Rock.

Hawaii: Honolulu, May 7-10. Chairman, Dr. R. W. Benz, 1141 Alakea St.

Illinois: Chicago, May 3-5. Sec., Dr. C. St. Clair Drake, Springfield.

Massachusetts: Boston, May 8-10. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

Nevada: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

New York: Albany, Buffalo, New York, and Syracuse, May 22-25. Sec.,. W. J. Denno, Education Bldg., Albany.

Ohio Reciprocity Report

Dr. George H. Matson, secretary of the Ohio State Medical Board, reports that 36 candidates were licensed through reciprocity from Aug. 9 to Dec. 6, 1916:

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Howard University	(1912) West Virginia; (1915)	Dist. Colum.
Northwestern University Woman's Medical School	(1902)	Illinois
Rush Medical College	(1900) (1915)	Illinois
Indiana Medical College	(1907)	Indiana
Indiana University	(1910)	Indiana
Medical School of Maine	(1909)	Maine
Baltimore Medical College	(1902) West Virginia; (1909)	Maryland
College of Physicians and Surgeons, Baltimore	(1914)	Maryland
Johns Hopkins University	(1912) (1915)	Maryland
Tufts College Medical School	(1912)	Maine
Detroit College of Medicine and Surgery	(1916,2)	Michigan
University of Michigan Homeo. Med. School	(1898)	Michigan
Univ. of Mich. Med. School	(1909) (1912) (1915,2) (1916)	Michigan
University of Minnesota	(1915)	Minnesota
St. Louis University	(1915, 2)	Missouri
Bellevue Hospital Medical College	(1898)	New York
Long Island College Hospital	(1915)	New York
University of Buffalo	(1904)	New York
Jefferson Medical College of Philadelphia	(1913)	New York
	(1915,2)	Penna.
University of Pennsylvania	(1902) Iowa; (1915)	Penna.
Woman's Medical College of Pennsylvania	(1902)	Penna.
Vanderbilt University	(1912)	Texas
University of Berlin	(1903)	Illinois

Oregon January Report

Dr. Herbert S. Nichols, secretary of the Oregon State Board of Medical Examiners, reports the written examination held at Portland, Jan. 2-4, 1917. The total number of subjects examined in was 15; total number of questions asked, 104; percentage required to pass, 75. The total number of candidates examined was 30, of whom 24 passed, including 4 osteopaths, and 6 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
College of Physicians and Surgeons, San Francisco	(1916)	76, 81
Hahnemann Med. College of the Pacific	(1916)	75
Coll. of Phys. and Surgs., Chicago	(1902) 75; (1903)	79
Rush Medical College	(1915)	79
University of Illinois	(1914)	83
University of Michigan Medical School	(1916)	78
University of Minnesota	(1910)	77
Missouri Medical College	(1897)	78
St. Louis College of Physicians and Surgeons	(1915)	78
Ohio Medical University	(1897)	75
University of Oklahoma	(1911)	75
University of Oregon	(1908) 75; (1916)	75, 75, 76, 78, 79.
Jefferson Medical College of Philadelphia	(1916)	87
FAILED		
University of Illinois	(1914)	74
University of Louisville	(1907)	62
Maryland Medical College	(1905)	69
Cincinnati College of Medicine and Surgery	(1900)	73
Jefferson Medical College of Philadelphia	(1915)	77
Tennessee Medical College	(1901)	64

Rhode Island January Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports that, Jan. 11, 1917, a graduate of the Homeopathic Medical College of Pennsylvania, 1882, was granted a license after an oral examination, the grade obtained being 80 per cen[illegible]

Medicolegal

Requirement of Vaccination in School District Justified by Conditions in County

(Hill et al. vs. Bickers et al. (Ky.), 188 S. W. R. 756)

The Court of Appeals of Kentucky dissolved an injunction granted by the circuit court in this suit by Hill, the principal teacher in the Bethlehem graded common school, the five district trustees, and ten patrons of the school, as plaintiffs, against the Henry County board of health and the county health officer, to prevent the defendants enforcing an order of the county board of health which required the teachers and pupils in the common schools of the county to be vaccinated as a condition to their further attendance. The court of appeals says that the state board of health had, by virtue of Section 2049 of the Kentucky statutes, giving it general supervision of the health of the citizens of the state, with power to make and enforce rules and regulations to prevent the introduction or spread of infectious or contagious diseases to or within the state, promulgated Rule 35 that "No person shall become a member of any school within the jurisdiction of this board, as teacher or scholar, without furnishing a certificate from some reputable physician that he or she has been successfully vaccinated, and has been revaccinated at least once in each seven years." Aug. 31, 1916, the Henry County board of health took steps to enforce this rule on and after Sept. 11, 1916, by notifying the teachers and trustees of the county schools to obey the rule. Hill conceived the idea that he had no right or authority as teacher to reject any pupil who offered to attend, and, backed by the chairman of the district board of trustees, who took the ground that the local board of health had no authority to enter or enforce the order of August 31, Hill declined to prohibit the attendance of unvaccinated pupils. Thereupon the local health board caused warrants to be issued against Hill and the chairman for disobedience of said order, and it was alleged that the defendants were threatening to have other and repeated similar warrants to issue against the plaintiffs. Affidavits showed that the residents of Bethlehem district, almost without exception, were violently opposed to the enforced vaccination of their children, and regarded it as an unnecessary and unwarranted invasion of their rights. It was said that there had not been a case of smallpox in that district within the past eight years, and that there was no reasonable apprehension of an outbreak. But the court thinks that, in view of what was shown to be the experience in Henry County, it was idle for the residents of Bethlehem district to say there was no necessity of enforcing the vaccination rule in the schools, or that it was an unreasonable requirement of the health board. They would make their unprofessional opinions jeopardize the health and lives of all the citizens of the county. Matters of such grave importance are not to be decided according to the whims of laymen. It presents a medical question; and for that reason boards of health are usually composed of physicians, experts in that line. The proof made it plain that the action of the board of health was not only reasonable, but also necessary. If it had done less, it clearly would have failed in its duty. The general and uniform rule is that, when there is a reasonable apprehension of the outbreak of a communicable disease, such as smallpox, health boards have authority to take such action as was here directed, in order to stamp out the disease and prevent its spreading. Even without a specific delegation of power, local or administrative authorities having control of the schools or general care of the public health are justified, by the existence of an emergency, in making vaccination a condition for admission to the public schools. And the legislature may also, by express provision, in the exercise of its police power, require or empower a local or administrative authority to require vaccination of children as a condition of their being admitted to the public schools, although smallpox be not prevalent, or its outbreak be not apprehended. But the converse is equally true, that unless power is clearly conferred local bodies may not require vaccination in the absence of smallpox, or the apprehension of an immediate outbreak thereof.

Society Proceedings

COMING MEETINGS

American Medical Association, New York, June 4-8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am. Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 21-23.
Am. Climatological and Clin. Association, Lakewood, N. J., May 29-31.
American Dermatological Association, Cincinnati, May 24-26.
American Gastro-Enterological Assn., Atlantic City, April 30-May 1.
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28-30.
Am. Laryn., Rhin. and Otol. Society, Niagara Falls, Can., June 1-2.
Am. Medico-Psychological Association, New York, May 29-June 1.
American Neurological Association, Boston, May 21-23.
Am. Ophthalmological Society, Virginia Hot Springs, May 29-30.
American Orthopedic Association, Pittsburgh, May 31-June 1.
American Otological Society, Atlantic City, May 29-30.
American Pediatric Society, White Sulphur Springs, May 28-30.
American Proctologic Society, New York, June 4-5.
American Psychopathological Association, Boston, May 24.
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31-June 2.
American Therapeutic Society, New York, June 1-2.
Arkansas Medical Society, Little Rock, May 1-3.
Association of American Physicians, Atlantic City, May 2-3.
Conference of State & Prov. Bds. of N. Amer., Washington, May 30-31.
Connecticut State Medical Society, New Haven, May 23-24.
Florida Medical Association, Atlantic Beach, May 18-19.
Georgia Medical Association, Augusta, April 18-20.
Illinois State Medical Society, Bloomington, May 8-10.
Iowa State Medical Society, Des Moines, May 9-11.
Kansas Medical Society, Salina, May 2-4.
Maryland Medical and Chirurgical Faculty, Baltimore, April 24-26.
Mississippi State Medical Association, Jackson, May 8-9.
Missouri State Medical Association, Springfield, May 14-16.
Nat. Assn. for Study and Prev. of Tuberculosis, Cincinnati, May 9-11.
National Assn. for the Study of Epilepsy, Skillman, N. J., May 28-29.
Nebraska State Medical Association, Lincoln, May 8-10.
New Hampshire Medical Society, Concord, May 16.
New York State Medical Society, Utica, April 24-26.
North Dakota State Medical Association, New Rockford, May 9-10.
Ohio State Medical Association, Springfield, May 14-16.
Oklahoma State Medical Assn., Lawton-Medicine Park, May 8-10.
South Dakota State Medical Association, Yankton, May 28-30.
Texas State Medical Association, Dallas, May 8-10.
Wyoming State Medical Society, Casper, May 9.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Anatomy, Philadelphia

March, XXI, No. 2

1 Laws of Bone Architecture. J. C. Koch, Baltimore.—p. 177.
2 Development of Scala Tympani, Scala Vestibuli and Perioticular Cistern in Human Embryo. G. L. Streeter, Baltimore.—p. 299.
3 *Effects of Inanition and Refeeding on Growth and Structure of Hypophysis in Albino Rat. C. M. Jackson, Minneapolis.—p. 321.

3. **Growth and Structure of Hypophysis in Rat.**—This paper forms the fourth of a series of studies made by Jackson on the effects of inanition on the albino rat. The material used included the hypophyses from ninety-one rats, 44 normal (control) rats of both sexes, varying from newborn to about 1 year of age; 15 rats held at maintenance (constant body weight) by underfeeding beginning at the age of 3 weeks; 6 older rats subjected to acute inanition and 5 to chronic inanition; and 21 young rats refed for various periods after being held at maintenance from the age of 3 weeks to 10 weeks or more. During normal postnatal growth there is considerable individual variation in the relative volumes of the three parts (lobes) of the hypophysis; but in general in the older rats the pars anterior (distalis) becomes relatively larger, and the pars nervosa correspondingly smaller, the pars intermedia remaining about the same in relative (percentage) volume. The relatively larger hypophysis of the female rats is due chiefly (if not entirely) to a larger anterior lobe. During the inanition, the volume changes in the lobe are variable. In young rats held at maintenance (constant body weight), the pars anterior is somewhat reduced, the intermedia and nervosa correspondingly larger. In chronic (adult) inanition the partes anterior and intermedia appear reduced, the nervosa increased. In acute (adult) inanition, the pars anterior appear relatively increased, intermedia decreased, and nervosa unchanged in relative volume. In young animals held at maintenance, the volume of the vascular stroma usually increases to about 13 per cent., and in acute or chronic inanition of adults to about 17 per cent. The parenchyma is, of course, correspondingly reduced in relative volume. During inanition, the loss is usually greater in the cytoplasm, the nuclei thereby increasing to 26 to 28 per cent. of the cell volume in the young held at maintenance, and to 23 to 26 per cent. in adults with chronic or acute inanition. The changes described in the hypophysis during hibernation are probably inanition effects. The rapid growth of the body following periods of inanition may be due to the embryonic condition to which the cells are reduced; but there is no evidence that such growth is due to any specific histologic changes in the hypophysis or other ductless glands.

American Journal of Roentgenology, New York

March, IV, No. 3

4 Lateral Roentgenography of Spine. P. M. Hickey, Detroit, Mich.—p. 101.
5 *Roentgen Appearances of Osteomyelitis. R. Hammond, Providence, R. I.—p. 107.
6 Broader Relationship Between Roentgenology and Various Theories of Systemic Disorder from Localized Sources. P. Brown, Boston.—p. 110.
7 *Roentgen Diagnosis of Metastatic Malignant Disease of Bone with Special Reference to Spinal Column. G. E. Pfahler, Philadelphia.—p. 114.
8 *Renal and Ureteral Stone Symptoms in Spondylitis. E. S. Blaine, Chicago.—p. 122.
9 Simple Method of Immobilization. P. M. Hickey, Detroit.—p. 131.

5 and 7. Abstracted in The Journal, Nov. 11, 1916, p. 1469.

8. Abstracted in The Journal, Nov. 11, 1916, p. 1470.

Annals of Otology, Rhinology and Laryngology, St. Louis

December, 1916, XXV, No. 4

10 Clinical Pathology of Tuberculous Laryngitis. J. Dworetzky, Otisville, N. Y.—p. 803.
11 Radical Mastoid Operation. T. J. Harris, New York.—p. 835.
12 Accidents in Bronchoscopy. H. H. Forbes, New York.—p. 845.
13 Factor in Prognosis of Acute Suppuration of Middle Ear. F. E. Franchere, Sioux City, Iowa.—p. 857.
14 Study of Physicomechanical Function of Faucial Tonsil. E. L. Kenyon and W. T. Kradwell, Chicago.—p. 862.
15 Involvement of Labyrinth by Way of Ductus Endolymphaticus. N. H. Pierce, Chicago.—p. 881.
16 Case of Syringomyelia with Marked Vestibular Symptoms. G. E. Shambaugh, Chicago.—p. 891.
17 Massage of Eustachian Tube. A. Lewy, Chicago.—p. 898.
18 Double Mastoid Operation; Report of Case and Exhibition of Roentgenographs of Mastoids. N. H. Goodenow, Everett, Wash.—p. 904.
19 Modified Radical Operation for Chronic Suppurative Otitis Media. H. B. Blackwell, New York.—p. 908.
20 Nondiabetic Acidosis, with Special Reference to Postoperative Acidosis in Children. I. Frank, Chicago.—p. 917.
21 Social and Economic Aspects of Deafness. A. J. Amateau, New York.—p. 930.
22 Sore Throat Clinically Considered. S. Johnston, Baltimore.—p. 942.
23 Extensive Keloid of Mastoid Wound Cicatrix. F. L. Ryerson, New York.—p. 947.
24 Case of Epithelioma of Posterior Pharyngeal Wall Cured by Electrocautery. D. Roy, Atlanta, Ga.—p. 951.
25 Difficulties and Complications of Sphenopalatine Ganglion Injection. H. L. Pollock, Chicago.—p. 958.
26 Intramural Malignant Tumor of Lateral Wall of Nasopharynx. E. P. Norcross, Chicago.—p. 967.
27 Relation of Autointoxications to Acute Membrane Disturbances. S. F. Snow, Syracuse, N. Y.—p. 973.
28 Sequestrum of Labyrinth. L. M. Hubby, New York.—p. 980.
29 Diagnosis and Operation of Sinus Thrombosis. J. Holinger, Chicago.—p. 985.
30 Study of One Hundred Cases of Mastoiditis and Its Complications, Requiring Operation. J. W. Downey, Jr., Baltimore.—p. 994.
31 Upper Respiratory Mucous Membrane as Key to Error in Metabolism. C. W. Stickle, Brooklyn.—p. 1006.
32 Two Maxillary Sinuses in one Maxilla. O. H. Horrall and H. F. Rawlings, Chicago.—p. 1015.
33 Advantages of Denker Over Other Operations on Maxillary Antrum, with Review of Twenty-One Cases After this Method. W. L. Simpson, Memphis, Tenn.—p. 1019.

Annals of Surgery, Philadelphia

March, LXV, No. 3

34 *Place of Radium in Surgery. E. M. Foote, New York.—p. 273.
35 *Intrathyroid Injections of Boiling Water in Hyperthyroidism. J. C. O'Day, Portland, Ore.—p. 279.
36 Treatment of Bony Defects of Lower Jaw; Report of Cases. C. A. McWilliams, New York.—p. 283.
37 *Studies in Plastic Surgery of Face. J. F. Esser, Holland.—p. 297.
38 Traumatic Aneurysm of Temporal Artery; Report of Cases. J. S. Horsley, Richmond, Va.—p. 316.
39 Trend of Surgery in Empyema of Thorax. M. W. Ware, New York.—p. 320.

40 *Prognostic and Therapeutic Significance of Skeletal Metastases in Carcinoma of Breast. I. Levin, New York.—p. 326.
41 *Significance of Patulous Appendix. J. W. Squires, Charlotte, N. C.—p. 341.
42 Renal Tuberculosis; Report of Cases. A. G. Rytina, Baltimore. —p. 346.
43 Reduplication of Ureter; Report of Cases. J. F. Geisinger, Richmond, Va.—p. 355.
44 Case of Isolated Sprain Fracture of Trapezium Produced by Indirect Violence. J. L. Bendell, Albany, N. Y.—p. 364.
45 Artificial Cell Proliferation with Horse Serum in Treatment of Burns. E. P. Robinson, New York.—p. 367.

34. **Place of Radium in Surgery.**—When the investigator in radium becomes so expert that he can say with definiteness, "Here is such and such a type of tumor and its bulk is approximately so and so. I know from experience that I can cause its entire disappearance with so much radium applied for so many hours," Foote thinks it will be time enough to advise radium in primary operable cases.

35. **Intrathyroid Injections of Boiling Water in Hyperthyroidism.**—O'Day claims that in seventeen cases treated by this method nothing but good has resulted, even in those first treated, when lack of experience was accompanied by its corresponding undeveloped technic.

37. **Plastic Surgery of Face.**—Esser reports cases of use of skin from the neck to replace defects; plastic operations about the mouth and epidermic inlay.

40. **Skeletal Metastases in Carcinoma of Breast.**—A clinical and roentgenologic study of ten cases reported by Levin shows that the skeletal metastases undoubtedly were present in all of them at the time of the operation. Pain in the different parts of the skeleton either appeared before or soon after the operation. The roentgenograms taken on admission to the hospital showed usually an extensive involvement of the bone, and the identical condition was found at the necropsy All this shows that the metastases were of long standing. Statistical investigations indicate that skeletal metastases of carcinoma may be very slow in their development. It may take years before clinical manifestations of any kind present themselves. The microscopic study of these cases by Levin showed that osteoplasia and osteomalacia are usually present side by side, and only in one case osteosclerosis, or new bone formation, predominates, while in another osteoporosis, or the destruction of the old bone, is mainly evident. The mechanism of the bone destruction in metastases of carcinoma differs from the one observed in inflammatory osteoporosis. In Levin's cases carcinoma cells, as well as the small connective tissue stroma cells, are found in close immediate apposition to the walls of the lacunae. The carcinoma cells were so frequently the only cellular elements within the lacunae of the bone that there cannot be any doubt that carcinoma cells act as direct osteoclasts. The impression gained by Levin is that the small stroma cells only subsequently enter between the bone and the carcinoma cells. The osteosclerosis, or the extensive formation of new bone tissue, is characteristic of skeletal metastases. The radical operation for a malignant tumor means a complete eradication of all tumor tissue from the organism. It is patent that a radical operation in this sense of the word is impossible as long as a skeletal metastasis was diagnosed before the operation. It would seem that in the overwhelming majority of all the cases of carcinoma of the breast the best surgical methods of treatment do not completely eradicate the disease, but only prolong life. But on the basis of the latter interpretation of the therapeutic results in carcinoma of the breast, skeletal metastases give a better prognosis than metastasis in other organs, since they are much slower in their development and may therefore be more readily controlled.

41. **Significance of Patulous Appendix.**—It is Squires' belief that when the muscular contraction at the appendiceal orifice, the valve of Gerlach, the peristalsis, or whatever the mechanism is that guards the appendiceal orifice, first becomes incompetent there results a compensatory hyperstalsis of the appendix. And gradually, for some reason, probably the increased pressure of fecal material, there is a failure of compensation and the appendix can no longer empty. It is on the same principle as the changes occurring in a heart lesion. There is first a compensatory hypertrophy of the heart, later a failure of compensation. In the appendix there is first a compensatory hyperperistalsis, later a failure of peristalsis. There is a roentgenologic symptom syndrome associated with the patulous appendix, the detection of which is sufficient evidence of an abnormal appendix. A patulous appendix, even though its drainage is good, is abnormal. The roentgenologic evidence of the damage being done by the patulous appendix is present in both the stomach and ileocecal region.

Boston Medical and Surgical Journal

March 22, CLXXVI, No. 12

46 *Neurologic Aspects of Food Poisoning. A. W. Fairbanks, Boston. —p. 413.
47 Seminal Vesiculitis and Prostatitis Treated by Vesiculotomy and Prostatic Drainage. J. H. Cunningham, Jr., Boston.—p. 422.
48 Feeblemindedness as Seen in Court. V. V. Anderson, Boston.—p. 429.
49 Proposed Health Insurance Legislation. F. W. Anthony, Haverhill. —p. 431.
50 Wise Preliminary to Adoption of Any Compulsory Health Insurance Act. E. A. Codman, Boston.—p. 435.

46. **Neurologic Aspects of Food Poisoning.**—Instances of food poisoning in which an unknown toxin manifested a conspicuously selective action on the nervous system are reported by Fairbanks. Fish was responsible for the illness of these people. It was apparently in good condition when obtained. It was purchased in a small town, where presumably the rest of it was sold and where, so far as known, no other instances of similar illness occurred. It was kept in a refrigerator four hours, then baked and immediately eaten. From this refrigerator other food, placed therein after the fish poisoning occurred, caused illness in several people, whereas the same food eaten before it had been in the refrigerator caused no illness whatever. Moreover, the individual who cleaned the refrigerator, who was not a member of the family, and who did not partake of any of the food that made the others ill, was also slightly ill afterward. This would seem to indicate that the icebox was infected and that a bacterial toxin was responsible for the illness. As it had been in constant use and no food taken therefrom had caused illness, until after the fish had been kept therein, it would seem that the fish must have been in some direct way responsible for the contamination of the refrigerator. If so, it must have been to some extent infected when placed in the refrigerator. The appearance of the nervous phenomena occurred with striking uniformity twenty-one days after the onset of the gastric symptoms.

Canadian Medical Association Journal, Toronto

March, VII, No. 3

51 Functional Reeducation and Vocational Training of Disabled Soldiers. E. M. von Eberts, Montreal.—p. 193.
52 Sphagnum Moss: Surgical Dressing. J. B. Porter, Montreal.—p. 201.
53 End Results of Various Disabilities of Returned Soldier. E. H. Reed, Calgary, Alberta.—p. 208.
54 Treatment of Syphilis. H. K. Detweiler, Toronto.—p. 213.
55 Medical Treatment of Obstetric Cases. H. C. Swartzlander, Oyen, Alberta.—p. 222.
56 *Obtaining Blood for Diagnostic Purposes in Infancy; Preliminary Report on Longitudinal Sinus Transfusion. E. M. Tarr, Montreal.—p. 226.
57 Newer Views on Ventilation. A. Fisher, Calgary, Alberta.—p. 229.
58 Ability of Mothers to Nurse Their Infants. A. Brown, Toronto. —p. 241.

56. **Obtaining Blood for Diagnostic Purposes in Infancy.**—Tarr recommends the longitudinal sinus route. He has entered the sinus 207 times for blood and has been disappointed but three times. Dextrose solutions have been administered sixty-four times in forty-nine infants. Salvarsan and diarsenol have been administered to eight infants under 2 and to one child 28 months old. Nineteen cases of so-called acidosis in infants under 2 years were treated with sodium bicarbonate solution intravenously with fifteen recoveries. One child 3 years old was given, during a period of five days, 980 c.c. of the solution. The patient was discharged well on the tenth day after admission. In this case the fontanel was rather cartilaginous and a gold plated lumbar puncture needle was used. Tarr also uses this route for blood transfusion.

Delaware State Medical Journal, Wilmington

March, VIII, No. 3

59 Recent Work at American Ambulance, Paris, France. R. R. Spahr, Wilmington.—p. 4.

Illinois Medical Journal, Chicago

March, XXXI, No. 3

60 *Biochemistry of Topical Applications with Special References to Use of Boric Acid in Septic Infections. E. H. Ochsner, Chicago. —p. 139.
61 Removal of Gallbladder. E. S. Judd, Rochester, Minn.—p. 144.
62 Etiologic Relationship Existing Between Gastric Ulcer and Gastric Cancer. F. Smithies, Chicago.—p. 149.
63 Surgical Complications of Pregnancy. W. C. Danforth, Evanston. —p. 156.
64 Medical Complications of Pregnancy. R. A. Scott, Evanston.—p. 159.
65 Treatment of Specific Diseases by Nonspecific Foreign Protein. F. B. Lusk, Chicago.—p. 162.
66 Modern Aspect of Cancer Problem. G. Kolischer, Chicago.—p. 163.
67 Adiposis Dolorosa (Dercum's Disease); Report of Case. A. G. Wittman, Peoria.—p. 165.
68 Amebic Dysentery. J. W. McGuire, Chicago.—p. 168.
69 Hemorrhoids, Their Cause and Treatment. F. A. Turner, Rockford.—p. 174.
70 Some Forms of Insanity Most Frequently Met by Physicians. C. H. Anderson, McLeansboro.—p. 178.
71 Pyelitis Treated Successfully with Silvol. J. C. R. Wettstein, Effingham.—p. 181.

60. See The Journal, Jan. 20, 1917, p. 220.

Iowa State Medical Society Journal, Des Moines

March, VII, No. 3

72 Cancer Problem. A. M. Pond, Dubuque.—p. 87.
73 Rheumatism; Report of Cases. J. W. Shuman, Sioux City.—p. 90.
74 Some Practical Points in Treatment of Diseases of Children. F. G. Murray, Cedar Rapids.—p. 94.
75 Tuberculosis of Kidney. C. M. Wray, Iowa Falls.—p. 98.
76 Acidosis as Surgical Complication. W. M. Shirley, Carroll.—p. 101.
77 Early Diagnosis and Surgical Treatment of Gallbladder Disease. L. C. Kern, Waverly.—p. 103.
78 Treatment of Pneumonia. R. E. Gunn, Deep River.—p. 107.
79 Throat Infection Complicated by Mastoiditis. C. F. Howland, Des Moines.—p. 109.

Journal of Infectious Diseases, Chicago

April, XX, No. 4

80 *Nonfiltrability of Typhus Virus. P. K. Olitsky, New York.—p. 349.
81 Intracutaneous Typhoidin Reaction. Preparation and Properties of Antigen. K. F. Meyer and C. R. Christiansen, San Francisco.—p. 357.
82 *Id. Nature and Specificity of Reaction. K. F. Meyer and C. R. Christiansen, San Francisco.—p. 391.
83 *Id. Relation of Cutaneous Hypersensitiveness to Experimental Immunity and Infection. K. F. Meyer, San Francisco.—p. 424.
84 *Treatment of Experimental Tuberculosis *in Guinea-Pigs* and Rabbits by Taurin, Alone and in Combination with Gold Chlorid and *Sodium Oleate.* M. Takeoka, Berkeley, Calif.—p. 442.
85 Differentiation of Paratyphoid Enteritidis Group. E. O. Jordan, Chicago.—p. 457.

80. **Nonfiltrability of Typhus Virus.**—In the experiments recorded by Olitsky it has been conclusively demonstrated that the infective agent of typhus belongs to the group of nonfiltrable viruses. This agrees with the previous observation that *Bacillus typhi-exanthematici* is nonfiltrable.

82. **Nature and Specificity of Typhoidin Reaction.**—Cutaneous hypersensitiveness of rabbits to typhoidin and similar preparations Meyer and Christiansen believe is, in all probability, the result of sensitization with typhoproteins or similar bacterial proteins. The hypersusceptibility to extract preparations of cultures can be transferred passively and small amounts of typhoidin are capable of producing local sensitization of the skin to subsequent injections of the same, or similar, antigens. In a fairly high percentage of hyperimmune or infected rabbits, nonspecific skin reactions follow the injection of extracts of pure bacterial proteins or microorganisms neither biochemically nor immunologically related to the organisms with which the animal has been treated. Some typhoid immune rabbits show nonspecific reactions with paratyphoid and *B. coli* extract, which can be considered as group reactions; but frequently such animals, when *highly* immunized, will also give reactions with heterologous antigens not in the least related to *B. typhosus*. These reactions may be explained as the probable result of nonspecific sensitization with protein substances common to all bacteria or vegetables in general.

83. **Relation of Cutaneous Hypersensitiveness to Experimental Immunity and Infection.**—Meyer's experiments suggest that careful quantitative tests with pure typhoprotein should be made on carriers of human typhoid. A simple test like the typhoidin test, if it should develop that this test does detect carriers, would be a valuable weapon in the hands of the health officer in the eradication of typhoid from communities in which the infection is apt to be perpetuated in this manner. A positive typhoidin skin reaction in a rabbit does not indicate that this animal will resist a subsequent intravenous injection of living typhoid bacilli, or that the animal is so protected that it will not become a chronic carrier of bacilli in gallbladder or liver. Cutaneous hypersensitiveness to typhoidin is most marked in rabbits infected with typhoid bacilli. Carriers of bacilli in gallbladder and liver develop skin reactions which apparently vary directly with the degree of the inflammatory process in the organs.

84. **Taurin in Treatment of Experimental Tuberculosis.**—Facts suggesting some relation between constituents of the bile and a resistance to infection with the tubercle bacillus, led Takeoka to incorporate the most characteristic amino-acid of the bile, taurin, in a combination treatment with a colloidal mixture of sodium gold chlorid and sodium oleate in experimental tuberculosis in guinea-pigs and rabbits. Apparently as favorable results were obtained with taurin alone as with taurin combined with sodium gold chlorid and sodium oleate. Guinea-pigs were infected with either bovine or human strains of tubercle bacilli. The results were similar with both. In nearly every instance the controls all died before any of the treated animals, and whereas the controls lost weight almost uniformly, the treated animals gained. The contrast in the extent of visible tuberculosis between controls and treated animals was marked. Whereas the process was advanced in the controls, it was arrested and in some instances apparently cured in the treated animals. The success of the treatment varied naturally in accordance with the variations in infecting dose, the route of inoculation, and the time of beginning treatment. The process of the disease was arrested and apparently cured when treatment was begun as late as three weeks after infection.

Journal of Laboratory and Clinical Medicine, St. Louis

March, II, No. 6

86 Spirochetes. H. Noguchi, New York.—p. 365. To be continued.
87 *Effect of Certain Drugs on Skin Reactions. J. A. Kolmer, S. L. Immerman, T. Matsunami and C. M. Montgomery, Philadelphia. —p. 401.
88 *Distribution of Blood Sugar as Regards Corpuscles, Plasma and Whole Blood in Health and Disease in Man. R. B. H. Gradwohl and A. J. Blaivas, St. Louis.—p. 416.
89 New Kind of Long Paper Kymograph. D. E. Jackson, St. Louis. —p. 424.
90 Construction of Clinical Laboratory Equipment. M. J. Breuer, Lincoln, Nebr.—p. 427.
91 *Rapid Examination of Occult Blood by Wagner Benzidin Method. W. T. Vaughan, Boston.—p. 437.

87. **Effect of Certain Drugs on Skin Reactions.**—The authors found that the iodids and particularly potassium iodid influenced the luetin and prodigiosis intracutaneous tests to a marked extent. Normal nonsyphilitic persons, reacting negatively in the luetin test, may show marked reactions when tested after the oral administration of 60 or more grains of potassium iodid. The bromids of potassium and sodium in the same dosage were found to have a similar but less marked influence. The chlorids of potassium and ammonium in the same dosage were found to influence the prodigiosin reactions but not the luetin reactions except to a very slight extent. The administration of the protiodid of mercury influenced the luetin reaction to some extent. It is probable that the administration of larger doses of these drugs would exert a more marked influence on skin reactions. Ether and chloroform anesthesia did not appear to influence skin reactions. *Substances most likely to excite inflammatory* reactions in the skin appear to be most readily influenced by the iodids and to some extent by bromids; intracutaneous tests with agar-agar, prodigiosin and ordinary luetin were more readily influenced

by these drugs than the reactions following the injection of a luetin of washed spirochetes and free of culture medium. Cutaneous tests are not as readily influenced by these drugs as intracutaneous tests. Conjunctival tests among normal rabbits to tuberculin were apparently not influenced. Cutaneous and intracutaneous reactions to tuberculin among persons reacting positively to both, appear to be rendered more extensive by potassium iodid and to a lesser extent by potassium bromid. Anaphylactic reactions to luetin in syphilitic persons appear to be rendered more extensive by potassium iodid and potassium bromid. The oral administration of potassium iodid and to a lesser extent of potassium bromid, increased the phagocytic power of the blood serum for B. prodigiosis; the increased severity of skin reactions in persons taking these drugs may be due to heightened leukocytic infiltration and phagocytosis about the injected material or to an increase of tryptic activity through the saturation of fatty acid radicals according to the hypothesis of Jobling and Petersen. It is suggested that it is probable that these drugs have influenced the luetin reactions as clinically applied and have been responsible in part for the divergent results observed and reported. Physicians are urged to be careful to rule out the possible influence on these drugs before conducting skin reactions.

88. **Distribution of Blood Sugar.**—Using the latest methods of sugar analysis in blood, namely, that of Lewis and Benedict as modified by Myers and Bailey, Gradwohl and Blaivas found that the amount of sugar is practically the same in the whole blood, plasma and cells. This is in the main in perfect agreement with the work of Tachau who used the older technic of sugar estimation. This seems to disprove the theoretical views of some of the older physiologists who held that a part of the sugar in the blood was in a state of loose combination with some other substance.

91. **Examination of Occult Blood by Benzidin Method.**—The Wagner benzidin test for occult blood is recommended by Vaughan on account of its ease, rapidity and comparative cleanliness in execution, and on account of its reliability. Meat fibers, pus and the usual drugs and foods ingested do not interfere with the reaction. The ordinary hospital diet, with meat, gives a negative reaction; but, if sufficient quantities of rare meat be taken, the stool reaction may become definitely positive.

Medical Record, New York

March 24, XCI, No. 12

92 Medical Flanders Before French Revolution. J. B. Stein, New York.—p. 487.
93 Effects of Altitude and Depression on Blood Pressure. H. Stamp, Philadelphia.—p. 499.
94 Some New Medicolegal Questions. T. D. Crothers, Hartford, Conn.—p. 501.
95 Is Appendicitis a Transmissible Disease? M. D. Bloomfield, Philadelphia.—p. 502.
96 Temporosphenoidal Abscess of Brain; Operation; Recovery. I. Grushlaw, New York.—p. 503.
97 Latent Heart Weakness Causing Obscure Congestive Disorders. M. B. Leviton, Chicago.—p. 504.

New York Medical Journal

March 24, CV, No. 12

98 Bacteriology of Influenza. W. H. Park, New York.—p. 529.
99 Clinical Types of Influenza. N. E. Brill, New York.—p. 530.
100 Treatment of Influenza. S. A. Brown, New York.—p. 536.
101 Treatment of Tuberculosis with Cyanocuprol. M. Otani, Tokyo, Japan.—p. 537.
102 Pyorrhea Alveolaris. A. H. Merritt, New York.—p. 543.
103 Gastromesenteric Ileus. J. W. Moore, Louisville, Ky.—p. 544.
104 Conservative Treatment of Diseases of Nasal Sinuses. E. L. Vansant, Philadelphia.—p. 547.
105 Folliculitis Urethralis. J. Kaufman, New York.—p. 549.
106 Local Vaccine. J. A. Pratt, Aurora, Ill.—p. 552.

Pennsylvania Medical Journal, Athens

March, XX, No. 6

107 *Typhoid and Typhophors. S. G. Dixon, Harrisburg.—p. 389.
108 Carriers in Schools with Special Reference to Diphtheria. H. J. Benz, Pittsburgh.—p. 395.
109 *Significance of Hunger Pain. J. W. Luther, Palmerton.—p. 399.
110 *Facts and Fallacies Concerning Electrotherapeutics. W. L. Clark, Philadelphia.—p. 405.
111 *Railroad Phase of First Aid. J. B. Hileman, Harrisburg.—p. 412.
112 *Injuries Common to Policemen and Firemen and Their First Aid Treatment. H. R. Owen, Philadelphia.—p. 413.
113 Beginnings and Needs of Philadelphia in Postgraduate Medical Study. J. B. Roberts, Philadelphia.—p. 421.
114 Ambulance of American Hospital of Paris. L. F. Stewart, Clearfield.—p. 427.

107, 109, 110. Abstracted in The Journal, Oct. 28, 1916, p. 1328.

111, 112. Abstracted in The Journal, Nov. 4, 1916, pp. 1394 and 1395.

Washington Medical Annals

March, XVI, No. 2

115 *Acute Pulmonary Abscess Treated with Artificial Pneumothorax. W. D. Tewksbury, Washington, D. C.—p. 73.
116 Case of Intestinal Obstruction Following Cesarean Section. S. R. Karpeles, Washington, D. C.—p. 79.
117 Breast Feeding and Some of Its Problems. J. Foote, Washington, D. C.—p. 82.
118 *Roentgen Therapy of Exophthalmic Goiter and Hyperthyroidism. C. A. Simpson, Washington, D. C.—p. 92.
119 Gliosarcoma of Insula, Illustrating Focal Diagnosis. T. A. Williams, Washington, D. C.—p. 99.
120 Some Experiences with Chloroform Anesthesia. L. Eliot, Washington, D. C.—p. 101.
121 Case of Aortic Aneurysm. H. C. Macatee, Washington, D. C.—p. 107.

115. **Acute Pulmonary Abscess Treated with Artificial Pneumothorax.**—Two cases are reported by Tewksbury to show that artificial pneumothorax is a rational method of treatment in all cases having a communication with bronchus. It gives promise of very appreciably lowering the mortality and raising the percentage of cure in acute abscess of the lung.

118. **Roentgen Therapy of Exophthalmic Goiter and Hyperthyroidism.**—Of seventeen cases reported by Simpson four were failures. Of the four, one was a carcinoma of the thyroid. In most of the cases there has been a decrease in the size of the tumor, in a few the size of the neck has become normal. The exophthalmus was not influenced. The pulse rate was lowered in all the cases.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Brain, London

October, 1916, XXXIX, Parts 3-4

1 *Possible Functions of Cerebrospinal Fluid. W. D. Halliburton.—p. 213.
2 Intracranial Aneurysms. E. G. Fearnsides.—p. 224.
3 *Degeneration of Muscle Following Nerve Injury. F. Roberts.—p. 297.
4 Disturbances of Sensations in Cases of Cerebral Lesions. T. G. Brown and R. M. Stewart.—p. 348.
5 Records of Speech in Disseminated Sclerosis. E. W. Scripture.—p. 455.
6 *Factors which Govern Penetration of Arsenic (Salvarsan) and Anilin Dyes into Brain; Bearing on Treatment of Cerebral Syphilis. J. McIntosh and P. Fildes.—p. 478.

1. **Possible Functions of Cerebrospinal Fluid.**—The cerebrospinal fluid, which is merely Locke's modification of Ringer's solution, Halliburton believes performs certain important functions. The view he has been led to take is that the nervous mechanism, being so sensitive, so easily influenced by anything unusual, therefore the neurons must be bathed in an ideal physiologic saline solution to maintain their osmotic equilibrium; the trace of protein it contains is probably quite sufficient for nutritive processes, and is no doubt the kind of protein particularly suited to repair the small amount of wear and tear which is the result of nervous action. The sugar, just as in Locke's solution, would serve for a supply of energy. The choroidal epithelium, in its wise choice of a suitable circumambient medium for the neurons, is really exercising a protective function. In order to keep out harmful proteins (toxins and the like), the comparatively harmless ones are kept also, almost completely; all share the same process of exclusion. This protective action applies, in addition, to the majority of soluble drugs; this may operate so as to be detrimental in disease conditions. The nonaccess of metallic and other poisons to the nervous elements is such a sine qua non for their health, that during those periods

when such substances are given for the relief of disease, or the slaughtering of parasites, the choroidal cells are unable to change their habits and do not allow the drugs to get through. Such, Halliburton believes, is the real significance of the simple composition of this remarkable secretion.

3. **Degeneration of Muscle Following Nerve Injury.**—In cases of peripheral nerve injury there is usually no doubt as to whether the muscle is degenerated or not. The question of practical importance is the extent of the injury which the nerve has suffered. To this question, it must be admitted, electric reactions give but a limited answer, the chief reason being that the electric response does not go *pari passu* with voluntary power. In cases of gunshot wounds of nerves, if the full reaction of degeneration is given by wasted paralyzed muscles, if the sensory loss is full and trophic changes well developed, exploratory operation is advisable without delay, provided the wound is aseptic. Cases in which the muscles give the reaction of degeneration, in which the wasting is slight, in which the sensory loss is not complete, and when the trophic changes are not developed, should be watched first for a couple of months or so. Injuries of this class usually recover without operative interference. As to the question of subsidiary treatment by electricity and massage, Roberts considers the constant current interrupted by a metronome to be the best. This should be done for at least fifteen to twenty minutes daily. Care must be taken that the current does not spread so as to stimulate the healthy muscles of the opposite side of the limb. If this is done, the paralyzed muscle is damaged by being stretched. For this reason the method of immersing the whole limb in an electric bath is strongly to be deprecated. The greater spread of current which occurs when the condenser is used makes this instrument less efficient as a means of treatment than the interrupted constant current.

6. **Penetration of Arsenic and Anilin Dyes Into Brain.**—McIntosh and Fildes found that certain dye substances can pass directly from the blood to the brain substance proper without being found in the cerebrospinal fluid, while others fail to penetrate into the brain. The chief factor which governs the passage of the dyes is their solubility reactions. This is a peculiar solubility and not a general lipoid solubility. It corresponds to a solubility in chloroform and in water or perhaps to their partition coefficient in these liquids. The present day arsenical remedies are, to some extent, inefficient in the treatment of syphilis of the central nervous system because they do not possess the necessary solubility to allow them to pass from the blood vessels into the brain substance. Their relative inefficiency has nothing to do with their absence from the cerebrospinal fluid.

British Journal of Ophthalmology, London

January, I, No. 1

7 Blood Pressure in Eye and Its Relation to Chamber Pressure. P. Smith.—p. 4. To be continued.
8 Pathology of Choroidal Melanomas. R. F. Moore.—p. 26.
9 Removal of Foreign Bodies by Means of Giant Magnet. G. H. Pooley.—p. 30.
10 Technic of Haab and Small Magnets in Extraction of Intra-Ocular Foreign Bodies. M. H. Whiting and C. Goulden.—p. 32.
11 Ring Magnet. T. H. Butler.—p. 46.

Journal of Pathology and Bacteriology, Cambridge

December, 1916, XXI, No. 1

12 *Thymusectomy and Its Relationship to Rachitis. J. M. Renton and M. E. Robertson.—p. 1.
13 *Isolation of Tubercle Bacilli from Sputum and Determination of Their Type. C. Y. Wang.—p. 14.
14 *Studies on Thyroid. W. Edmunds.—p. 23.
15 New Methods for Production of Antistreptococcal Serums. A. H. Caulfeild.—p. 28.
16 Biochemistry of Loss of Power of Tubercle Bacillus to Stain with Carbol-Fuchsin. A. H. Miller.—p. 41.
17 *Some Streptothrixes Isolated from Tumors. A. S. Leyton and H. G. Leyton.—p. 47.
18 *Human Bone and Joint Tuberculosis. A. S. Griffith.—p. 54.
19 *Unusual Malformations of Heart in Case of Congenital Heart Disease. J. I. Robertson.—p. 78.
20 Transplantation of Bone Marrow into Spleen; Experimental Observations on Myeloid Metaplasia. Y. Matsuoka.—p. 84.
21 *Vitamins, Amino-Acids and Other Chemical Factors Involved in Growth of Meningococcus. D. J. Lloyd.—p. 113.

12. **Relation of Thymusectomy to Rachitis.**—It is held by Renton and Robertson that spontaneous rickets gives rise to exactly the same symptoms as Basch, Klose, Vogt and Matti attribute to thymusectomy, if one excepts the adipose stage of Klose and Vogt. The removal of the thymus does not make the animals more susceptible to spontaneous rickets, and if they develop it, they do so at the same time and in the same manner as the controls. Thymusectomy of itself does not appear to cause any symptoms. The authors are thus of the opinion that removal of the thymus cannot be held responsible for the onset of rickets or similar bony changes, and the evidence they have obtained points to the changes which have been credited to loss of the thymus really being due to the development of spontaneous rickets in young animals. These conclusions are based on animal experiments.

13. **Isolation of Tubercle Bacilli from Sputum.**—Twenty-eight of the twenty-nine bovine strains isolated by Wang from the sputum, produced, in the rabbit, either no tuberculosis or only a retrogressive tuberculosis, similar to that produced by bacilli of the "human" type. The remaining culture showed well marked cultural characteristics of the "bovine" type, and was of high virulence for the rabbit. A rabbit inoculated with this strain died during the sixth week after injection, and, on examination, showed extensive tuberculosis of a rapidly progressive type. The virulence of this culture was again tested, and the same extensive tuberculous lesions were found. The cultural characters and the pathologic lesions in this case, therefore, agreed in essential particulars with that produced by the tubercle bacilli in the "bovine" type. Wang says that the conclusion can safely be drawn that, by means of the rabbit tests alone, tubercle bacilli as they occur in lesions in the human body can be divided into two distinct groups. One group possesses identical cultural characters and virulence for rabbits with those exhibited by tubercle bacilli isolated from bovines, and may be thus termed the "bovine" type; the other group has a low virulence for rabbits, is practically always obtained from a human source, and may be termed the "human" type.

14. **Compensating for Lost Thyroid Function.**—Sixteen attempts were made by Edmunds to keep dogs alive after total excision of both thyroid and parathyroids by milk feeding and, if necessary, intravenous injections of calcium lactate, but in only six out of sixteen was the treatment successful, and in them it was probably necessary, as was done, to continue the calcium feeding to prevent tremors, ataxia, convulsions and death. If the administration of calcium in milk by the mouth fails to keep off the symptoms, intravenous injections of the lactate of calcium may be given. These may or may not be successful in preventing symptoms and death; if they are, they generally succeed in the first three months or so; after that the animal may live for months or even years on the milk with added calcium. From this it would appear that after a time some change occurs in the animal, and this would seem to be a compensating hypertrophy of the pituitary. With respect to treatment, partial or complete loss of the parathyroids in thyroid operations can be treated with the parathyroid preparations now on the market. In the same way can be treated cases of disease suspected of being due to parathyroid insufficiency. An alternative, or additional, treatment is by the administration of calcium, which, as Edmunds has just seen, may succeed where parathyroid preparation fails; but it is necessary to give the calcium in large doses. Five or 10 grains of lactate of calcium is of no use. Ten grains corresponds to the amount of calcium in 2 ounces of milk, and it is necessary to put the patient on a diet mainly or wholly of milk, and it may be advisable to give, in addition, intravenous injections of lactate of calcium.

17. **Streptothrices Isolated from Tumors.**—The Leytons examined twenty-one human tumors and from sixteen they have isolated a streptothrix. Eight failed to grow after the second generation, and two have since died out, so that at present six strains are living and growing. Of all these, one was obtained directly from the patient's blood; eleven were grown from tumors removed by operation within the preced-

ing twenty-four hours, and four were isolated from postmortem room material. Nine tumors were of mammary origin, and of the remainder, one each came from the tongue, larynx, mediastinum, gallbladder, abdomen, cervix uteri and skin of the foot. Whether the streptothrix bears any relation to the formation of tumors the authors are not ready to say. It is significant that in one case after feeding on streptothrix a mediastinal tumor was found in a rat, and the same type of streptothrix was recovered from the tumor. They also have evidence that vaccination with streptothrix will protect a certain percentage of rats from inoculated sarcoma.

18. **Human Bone and Joint Tuberculosis.**—The total number of cases investigated by Griffith is 155. This series shows that infection in bone and joint tuberculosis may be acquired by way either of the respiratory tract or of the alimentary tract. The total number of strains isolated from 141 patients is 216, of which 82 (representing 73 viruses) were obtained direct. Twenty-five yielded cultures of bovine tubercle bacilli, 111 cultures of human tubercle bacilli and 5 atypical cultures.

19. **Unusual Malformations of Heart.**—Briefly, the following conditions were present in the heart which Robertson obtained from a boy 13½ years of age. The heart was situated in the left thorax, the afferent vessels were normal; the atria were transposed; the ventricles were transposed; while the efferent vessels were straight and transposed. The course of the aorta beyond the heart was normal, as it crossed the left bronchus and descended along the left of the spinal column. It was therefore a case of dextrocardia of the atrial and ventricular chambers, with transposition (not reversed torsion, which would have completed the mirror picture of a normal heart) of the efferent vessels, but there was no *situs inversus.*

21. **Vitamins, etc., in Growth of Meningococcus.**—Lloyd states that the primary cultivation of the meningococcus in vitro is only possible in the presence of certain accessory growth factors (the so-called vitamins) present in blood, serum, milk and other animal fluids and probably present also in vegetable tissues. The meningococcus, after isolation from the body, gradually develops a change in its metabolism of such a nature that it becomes increasingly independent of a vitamin supply in the medium. Old laboratory strains need no additional vitamin supply if the medium contains an abundant supply of free amino-acids. Culture of the meningococcus must be kept permanently in a moist atmosphere in order to retain their vitality.

Practitioner, London

March, XCVIII, No. 3

22 Dreams and Their Interpretation. R. Armstrong-Jones.—p. 201.
23 Cancer Problem and World War. W. S. Bainbridge.—p. 220.
24 Strangulated Hernia; Report of Cases. W. S. Handley.—p. 235.
25 Labyrinthine Focal Infections. M. Yearsley.—p. 245.
26 Transfusion of Blood with Reference to Pernicious Anemia. O. Leyton.—p. 251.
27 Inheritance of Normal and Pathologic Traits in Man. H. Drinkwater.—p. 257.
28 Salvarsan and Its Substitutes. J. L. Bunch.—p. 279.
29 Simplified Technic for Administration of Neosalvarsan. C. E. Jenkins.—p. 287.
30 Two Cases of Sudden Death After Kharsivan Injection. S. Vassallo.—p. 290.

Annales de Gynécologie et d'Obstétrique, Paris

January-February, LXXII, pp. 385-448

31 *Welfare Work for Infants in Paris District during Second Year of War. (De la protection de l'enfance pendant la deuxième année de guerre.) A. Pinard.—p. 385.
32 *The Functions of the Corpus Luteum. (Sur les rôles du corps jaune.) C. Mulon.—p. 415. To be continued.

31. Reviewed in these columns, February 10, p. 491.

32. **The Functions of the Corpus Luteum.**—Mulon remarks that only quite recently has the corpus luteum been promoted to the rank of a glandular organ with an internal secretion. As soon as this was established, various functions were attributed to it, so that the corpus luteum, regarded for so long as nothing but a cicatrix, is now held responsible as the *primum movens* of the entire genital physiology in the female. She discusses in turn the twenty-six various functions that have been attributed to the corpus luteum. Many of them are exactly contradictory, but arguments and data have been advanced in favor of each as she describes. The article is to be continued.

Annales de Médecine, Paris

January-February, IV, No. 1, pp. 1-107

33 *Typhoid and Paratyphoid Bacilli in the Stools. M. Labbé and G. Canat.—p. 1.
34 Clinical Evolution and Treatment of War Wounds of the Chest. L. Reverchon and S. I. De Jong.—p. 12.
35 Fractures of the Sixth Cervical Vertebra in Diving. (*Plongée de tête par fond insuffisant. Fracture de la sixième vertèbre cervicale.*) J. A. Sicard and L. Rimbaud.—p. 34.
36 Elimination of Chlorids in Two Cases of Dropsical Beriberi. P. Pagniez and P. Vallery-Radot.—p. 45.
37 *Pleural Tuberculosis and Tuberculous Polyserositis. P. Ameuille.—p. 55.
38 *Etiology, Evolution and Prognosis of Acute War Nephritis. F. Trémolières and L. Caussade.—p. 73.
39 Picric Acid Intoxication and Picric Jaundice. P. L. Marie.—p. 85.

33. **Typhoid and Paratyphoid Bacilli in the Stools.**—Canat relates that he obtained positive findings in 60 of the 198 examinations of the stools from 128 typhoid or paratyphoid cases. The details of the whole number are tabulated for comparison. The bacilli appear early in the stools but grow less with each week. They were found in 50 per cent. of the grave cases but only in 30 per cent. of the milder ones. In 102 patients with various affections other than paratyphoid or typhoid, paratyphoid bacilli were found in the stools of 8, but no typhoid bacilli carriers were encountered.

37. **Pleural Tuberculosis.**—Ameuille relates that in the last ten months of the 2,600 tuberculous soldiers he has examined, he found that the serous membranes were involved in 270. Isolated tuberculous pleuritis was the most frequent, but in a number of the cases the peritoneum, pericardium, meninges or synovial membranes were involved likewise or alone. As a rule, the pleurisy without effusion is the first process. Scarcely any of the men were over 24. The lung did not become involved often. The infection in the pleura is usually the result of the fanning into a flame of some old glandular, mediastinal or pleural process; direct contact infection is not needed to explain it.

38. **Acute Nephritis Among the Troops.**—In about 33 per cent. the kidney disturbances noted in the soldiers on active service are merely simple albuminuria. In 67 per cent. there is actual subacute nephritis with a tendency to dropsy. After six weeks or two months of hospital care the albuminuria disappears in about 10 per cent. It persists in 25 per cent. in minute proportions but varying with fatigue and diet and thus compelling a reserved prognosis notwithstanding the good general condition. The men with subacute nephritis were left with a tendency to edema in about 44 per cent. of the cases. If there is no cardiovascular derangement, the only relics left may be a residual albuminuria or albuminous nephritis. In 7 per cent. the nephritis passed into a chronic stage, some cases proving speedily fatal.

Archives de Médecine des Enfants, Paris

February, XX, No. 2, pp. 57-112

40 Diagnosis and Treatment of Congenital Stenosis of the Pylorus. C. G. Grulee and Dean Lewis (Chicago).—p. 57. To be continued.
41 Fatal Pneumococcus Infection in Three Newborn Infants. (*Une petite épidémie de pneumococcie chez le nouveau né.*) Condat.—p. 88.
42 *Pneumococcus Brain Abscesses in Boy of Six. Condat.—p. 92.
43 *Prophylaxis of Measles. (Prophylaxie de la rougeole.) J. Comby.—p. 94.

42. **Multiple Pneumococcus Abscesses in Brain of Boy of Six.**—The child had apparently succumbed the eighth day to acute meningitis, but necropsy revealed twelve pneumococcus abscesses the size of a nut scattered through and on the brain. They were unmistakably metastatic. The right lung showed traces of recent pneumonia.

43. **Prophylaxis of Measles.**—Comby describes the regulations that have been enforced in England and Wales since November, 1915, respective to notification and disinfection in cases of measles and German measles. He reproduces the official circulars that are distributed.

Bulletin de l'Académie de Médecine, Paris

February 20, LXXVII, No. 8, pp. 217-256

44 *Discussion of Measures for Welfare Work among Factory Workers' Infants. Doléris and others.—p. 222. Continuation.
45 Operative Correction of Stenosis of Trachea and Esophagus from War Wound; Two Cases. Guisez.—p. 254.

February 27, No. 9, pp. 257-306

46 Successful Extraction of Scrap of Shell in Anterior Mediastinum in Contact with Superior Vena Cava. E. Kirmisson.—p. 296.
47 Monomyoplegia from War Wounds of Peripheral Nerves. Mally and Corpechot.—p. 298.
48 Spontaneous Rupture of Right Auricle in Young Man with Infectious Endocarditis, Aneurysm of the Mitral Valve and Coronary Sclerosis. P. R. Joly.—p. 299.
49 *Child Welfare Work at Havre during the War. (L'enfance au Havre pendant la guerre.) L. Loir and H. Legangneux.—p. 303.

44. Welfare Work for Factory Working Mothers and Their Infants.—The discussion on this subject has continued several weeks in the Académie. Pinard declared that as the present laws grant an allowance to women only for the four weeks preceding delivery, the benefit therefrom is often annulled by the fact that no one can tell exactly when the delivery is going to occur. If the four weeks pass without the childbirth, she is not entitled to further allowance. Pinard insists that an allowance of 5 francs a day (about $1), should be given to every pregnant woman and every woman nursing a child less than 1 year old, if the women claim it. He adds that during the war the births have dropped to 60 per cent. of the 1909 figure. Instead of 760,000 births there were only 450,000 last year, so the amount to be paid out in this allowance he pleads for, is not such an overwhelming sum. This presupposes that the factory will refuse to accept pregnant women. He says that the munitions factories in England reject pregnant applicants for work, and that the manufacturers in certain towns in France have long made provision for their pregnant and nursing workers. Doléris presented a long list of industrial towns where factories provide a *chambre d'allaitement* where the women go at regular hours to suckle their babes. The manufacturers want the supply of workers kept up, and numbers of them have introduced innovations in the way of welfare work of various kinds for the mothers and the infants. But even at the best, Pinard exclaimed, "the factory is the killer of children—*tueuse d'enfants.*" Prenant voiced the fear that the factory may even in time annihilate the maternal instinct, adding that the whole question of welfare work for prospective mothers is on a different basis now from what it has ever been before as women are now doing men's work in so many lines. Senator Strauss took part also in the debate. While deploring the low birth rate, he declared that it did not average lower among factory workers than in other groups of women, and that the children born to the factory workers averaged high in the maternity records. He fears that exclusion of pregnant women from the factories will encourage sterility and abortions. Bar insisted that a working woman should not suffer in her material interests from bearing or suckling a child. On the contrary, it should be to her interest to do so.

49. Infant Welfare Work at Havre.—Loir's statistics show a considerable decline in the birth rate and rise in infant mortality. He declares that for the latter, congenital weakness is mainly responsible, the women working in the munitions factories bearing feeble infants from the deleterious influence of the overwork and the manipulation of chemicals. He emphasizes that the present methods of financial assisting of women at childbirth foster pauperism. The remedy for this is to give the financial aid to all women in this condition, without their having to beg for it.

Journal de Chirurgie, Paris

Concluding Number of Vol. XIII, No. 6, pp. 645-755

50 *Parotitis in Typhoid. P. Emile-Weil.—p. 709.

50. Parotitis in Typhoid.—This is only an abstract of the article by Weil, which was published elsewhere. He relates that in the course of severe typhoid he witnessed parotitis develop in nine cases. Five of the men died among the seven with suppurating parotitis. The two who recovered had been treated by squeezing out a spoonful of pus through the duct of Steno morning and night, followed by application of hot water compresses. In the two nonsuppurating cases the parotitis subsided in a week under the moist heat alone. This number of the *Journal de Chirurgie* contains no original articles. It completes the volume that was under way when the war broke out. This number is dated therefore December, 1915. It is now proposed to resume regular publication every two months. The first six numbers in 1917 are to be devoted to war surgery.

Lyon Chirurgical

1916, XIII, No. 6, pp. 837-974

51 Treatment of War Wounds and Diseases of Joints. (L'immobilisation et la mobilisation dans le traitement des maladies articulaires.) A. Broca.—p. 837.
52 Immobilization of War Wounds of Long Bones and Joints with Slats, with or without Plaster. (Immobilisation à l'aide d'attelles de store.) Eynard and P. Santy.—p. 864.
53 Treatment of Compound War Fracture of the Shaft of the Humerus H. Alamartine.—p. 877.
54 Treatment of Wounds of the Skull. (Les blessures du crâne.) J. Boeckel.—p. 903.
55 *Local Anesthesia. (De l'anesthésie exclusivement locale à la novocaine adrénaline en chirurgie.) P. A. Petridis.—p. 912.
56 *Histologic Study of Homoplastic Skin Grafts; Two Cases. G. Cotte and Dupasquier.—p. 947.
57 Hemangioma plus Lymphangioma; Two Cases. J. Bolognesi (Siena).—p. 957.
58 Restorative Operation for War Wound of Perineum Region. (Plaie par balle probablement explosive. Lésions d'éclatement du périnée postérieur avec section de l'urètre membraneux et du rectum. Restauration précoce. Bon résultat anatomique et fonctionnel.) J. Bosquette.—p. 963.

55. Local Anesthesia.—Petridis gives an illustrated description of his method of blocking the nerves by injecting a 0.05 per cent. solution of novocain in a 0.9 per cent. salt. solution, adding a little epinephrin as needed. He relates his experiences with operations on the head, neck, trachea, in six cases of removal of the breast, in thirteen of resection of ribs, in two vaginal hysterectomies, and in numbers of other major and minor operations—a total of 142 operations under this local anesthesia with only ten failures. The anesthesia was complete in 367; fifteen required a little supplementary chloroform. This latter group includes ten appendicectomy cases. Among the practical points mentioned is that phlegmonous tissue does not take the anesthetic by any means as well as normal tissues. He also comments on the special advantages of epinephrin in operations for hemorrhoids, as it does away entirely with the usual hemorrhage.

56. Skin Grafts.—Cotte and Dupasquier relate that they covered the denuded head of a young woman, who had been completely scalped, with skin grafts from a stillborn child. By the end of a few weeks not a trace of the scraps was left. They had all been absorbed without suppuration, melting away like sugar in water. Then skin from a 10 year old child, killed in an accident, was applied. This, too, was absorbed by the leukocytes in less than a month. In its place young connective tissue had formed with an attempt at cicatrization.

Presse Médicale, Paris

February 1, XXV, No. 7, pp. 65-72

59 *War Wounds and Prophylaxis of Infection. H. Vincent.—p. 65.
60 *Technic for Paravertebral Anesthesia in the Neck Region. (Anesthésie régionale.) A. D. Santoni.—p. 67.
61 Congenital Absence of Thumb. (Ectrodactylie du pouce avec intégrité du radius.) S. Mercadé.—p. 68.

February 5, No. 8, pp. 73-80

62 *Reflex Action from Irritating Vapors on the Nasal Mucosa. (Les réflexes pnéo-pnéiques et pnéo-cardiaques.) H. Roger.—p. 73.
63 *Osteitis of Tip of Petrous Portion of Temporal Bone. (L'ostéite de la pointe du rocher.) A. Jouty.—p. 76.

59. Prophylactic Treatment of Wounds.—This article has already been summarized, page 1009.

60. Nerve Blocking for the Neck and Arm.—*Santoni* has been studying the concentration of the anesthetic as affecting the anesthesia. He injected the anesthetic in salt solution ranging from 15 to 30 per thousand, and also in pure water. The hypotonic solutions induced the anesthesia more promptly, but it did not last over an hour, while with the hypertonic solution the effect was slower in developing but lasted longer. By this means the specific action of the anesthetic is supplemented by a secondary action, purely physical. He has found extremely useful and effectual a method of cervical-paravertebral regional anesthesia, as he describes in detail. The patient lying on his side bends his head to throw into relief the seventh cervical spinous process. A band of intradermic infiltration is then applied 3 cm. from the median line. The needle is introduced 5 mm. above the seventh cervical, it is pushed in until it hits the transverse process. Then the needle gropes along to its upper edge and, as soon as this is felt, the tip is slanted downward at an angle of 20 or 25 degrees and the needle is worked in for another 10 or 15 mm. It is then close to the seventh pair and 3 c.c. of the 2 per cent. solution of the anesthetic (novocain or its equivalent) are injected, sending the fluid in all directions. The points to reach the other nerves are 15, 30, 45, 60, 70 and 80 mm. higher. To anesthetize them, the above procedure is repeated at the proper points.

62. **Heart and Respiratory Reflexes from Sudden Irritation of Mucosa of Air Passages.**—Roger gives a detailed description of what he calls pneo-pneic and pneo-cardiac reflexes, induced by sudden application of irritating fumes to the nasal mucosa, ammonia, ether or chloroform. The experiments were made on rabbits, the denuded carotid connected with a manometer while the respiration was recorded with a pneumograph and chromograph record on the same chart. Provision was made to ensure that the reflex action was due exclusively to the effect on the nasal mucosa, and not to deeper inhalation of the fumes. Some of the experiments were made after the vagus had been severed on both sides. The reflex consists in a respiratory spasm, arresting the respiration in expiration, with a drop in blood pressure, followed by extreme oscillations, the blood pressure finally rising above its primary level. In some of the rabbits the excitation of the nasal mucosa induced a tetanic contraction of the heart. Inhalation of chloroform or ether does not have the same effect as its sudden application. The absorption of the drug reduces the amplitude of the respiratory movements and lowers the blood pressure.

63. **Osteitis of the Petrous Portion of the Temporal Bone.**—Jouty says that the development of trigeminal neuralgia and of external oculomotor paralysis, in the course of an ordinary otitis media, shows that the tip of the petrous portion has become involved. When these two signs appear together or with a few days' interval, the diagnosis is certain. In most cases this focus of osteitis retrogresses, but if it progresses the neuralgia grows worse and an abscess forms, with danger of meningitis. Necropsy has shown meningitis in all the known fatal cases to date. In the two cases on record in which this petrous focus was suspected, the whole petrous portion was gouged out before discovering the focus in the tip. The patients recovered, but nervous disturbances and neuralgia followed from the extensive destruction of the internal ear and facial nerve. Jouty differentiated the trouble with precision in a personal case described, basing his diagnosis on the simultaneous appearance of trigeminal neuralgia and the external oculomotor paralysis. The operation was thus exclusively restricted to the apex of the petrous bone, and the patient recovered completely without damage of the internal ear or facial nerve. The first step is to ensure ample petromastoid drainage. This is better than mere trephining of the mastoid region.

Progrès Médical, Paris

February 3, XXXII, No. 5, pp. 37-44

64 Treatment of Nasal and Bronchial Asthma by Local Applications of Pituitary Solution. H. Bourgeois.—p. 37.
65 Wire to Encircle Shattered Bone. (Cerclage au fil métallique dans le traitement des éclatements des os longs par projectiles de guerre.) M. Sénéchal.—p. 38.

February 10, No. 6, pp. 45-52

66 *Paratyphoid Fevers and Dysentery. J. Carles.—p. 45.
67 Frostbite and Its Treatment with Novocained Paraffin. A. Chalier. —p. 46
68 Snapping Hip in an Acrobat. (A propos d'un cas de hanche à ressort.) V. Combier and J. Murard.—p. 48.

66. **Paratyphoid Fevers and Dysentery.**—Carles' experience has confirmed that paratyphoid fever may deceptively simulate [illegible]ributed to It may also cause the flaring up of an old and long as nothi[illegible]ong healed dysentery. He has encountered cases *primum moven*[illegible]ous paratyphoid and d[illegible]tery, and others in She discusses i[illegible] the twenty-six various . Differentiation is almost impossible without bacteriologic examination of the blood and stools, and treatment, to be effectual, must be based on an exact diagnosis. Otherwise each disease is liable to pass into a chronic and very tenacious phase.

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 10, XLVII, No. 6, pp. 161-192

69 Acute Exophthalmos with Quincke's Edema. Meyer-Hürlimann.—p. 161.
70 *Spirochete Bronchitis. (Bronchite de Castellani.) B. Galli-Valerio.—p. 169.
71 Aspirating Bougie for Esophagus and Stomach. M. Einhorn (New York).—p. 175.
72 Sulphur in Salvarsan. (Ueber eine im Salvarsan (606) in sehr geringen Mengen vorkommende Schwefelverbindung.) C. Strzyzowski.—p. 176.

70. **Spirochete Bronchitis.**—Galli-Valerio gives a list of sixteen different maladies in which spirochetes have been found, and in some were regarded as responsible for the affection. Spirochete bronchitis has been encountered in Ceylon, India, the Philippines, Europe and elsewhere, since Castellani called attention to it. Galli-Valerio has had seven cases in his practice at Lausanne. The prognosis is favorable if the treatment is energetic enough to arrest the disease before it has passed into a chronic phase. Microscopic examination of the stained sputum reveals the spirochetes; all his patients had been labeled tuberculous. In treatment he advises bed rest, keeping up the patient's strength and giving arsenic, merely Fowler's solution by the mouth or intramuscular injection of some mixture containing sodium cacodylate. He recommends also salvarsan. The disease runs an acute course in five or six days, with high fever and profuse expectoration of a whitish or yellowish sputum. Percussion is practically negative, and auscultation reveals merely disseminated râles. Headache and pains in the limbs, reduction in hemoglobin and reds, with manifest leukocytosis, are other features. The chronic form shows a hectic fever, deceptively like that of tuberculosis, with chronic cough and expectoration and sometimes actual hemoptysis, with much weakness and anemia. Untreated, it may drag along for years with intervals of improvement.

Gazzetta degli Ospedali e delle Cliniche, Milan

February 4, XXXVIII, No. 10, pp. 145-160

73 *The Blood Findings in Typhoid in the Vaccinated. (Nota riassuntiva sulle ricerche siero-diagnostiche ed emoculturali fatte nei tifosi con riguardo alle vaccinazioni antitifiche.) G. Baglioni. —p. 146.

February 8, No. 11, pp. 161-176

74 Traumatic Paralysis of Left Hypoglossal Nerve with Traumatic Neurosis of the Right Arm, Following Stab Wound of the Neck. V. Russo.—p. 161.

73. **Typhoid in the Vaccinated.**—Baglioni tested the blood of 174 typhoid patients and obtained positive agglutination with typhoid bacilli in 96, with paratyphoid *A* in 22, and *B* in 33. There was group agglutination in 8, and no agglutination of any type in 25. Typhoid bacilli were cultivated from the blood in 28 cases, paratyphoid *A* in 26 and *B* in 17, while the blood seemed to be sterile in 102. He concludes that not much reliance can be placed on the seroreactions in the vaccinated. The immunity conferred by antityphoid vaccination varies in individual cases, just as one attack of typhoid may or may not protect against another attack.

Policlinico, Rome

February 11, XXIV, No. 7, pp. 201-232

75 Abdominal Wounds in War. (Osservazioni sulle ferite addominali curate nella terza ambulanza chirurgica.) R. Bastianelli.—p. 201.
76 Test to Detect Simulation of Deafness. (Sul problema della valutazione dell'ipoacusia.) T. Mancioli.—p. 204.
77 *Advantages of Tar for Dressing Minor Wounds. (Il catrame nella chirurgica minore.) M. Pasquali.—p. 204.
78 Phenol Treatment of Tetanus. L. Cerchione.—p. 211.

February 18, No. 8, pp. 233-264

79 Physiologic Value of Alcoholic Beverages. (Precetti e preconcetti medici in fatto di alimentazione pratica. IV.) S. Baglioni.—p. 233.
80 Inflatable Pads for Local Hemostasis. (Emostasi per mezzo di pallancini elastici; abolizione del laccio emostatico.) A. L. Soresi (New York).—p. 247.

77. **Tar for Dressing Wounds.**—Pasquali calls attention to the advantages of vegetable tar poured over frostbitten feet, over burns and other torpid minor surgical processes. If necessary, it is heated a little to render it more fluid. To date there have been no untoward by-effects. The men all laud the relief from pain and itching, while the lesions seem to heal more rapidly under the tar than without. The tar does not dry out nor grow stiff, and it can be easily washed off with a little alcohol or benzin.

Brazil-Medico, Rio de Janeiro

February 10, XXXI, No. 6, pp. 43-50

81 Brazilian Method of Eliciting Achilles Tendon Reflex. (Da pesquisa do reflexo achilleo.) O. Ayres.—p. 43.
82 Heliotherapy in Brazil. A. Moncorvo, Jr.—p. 44. Continuation.

Cronica Medica, Lima

February, XXXIV, No. 634, pp. 41-76

83 Present Status of Our Knowledge of Leprosy. E. Odriozola.—p. 41.
84 *Gallstone Surgery in Peru. (Estadistica nacional en la cirugia de las vias biliares.) F. Wieland.—p. 52.
85 *The Alligator Pear Adapted for Antidiabetic Diet. (La palta como alimento de los diabeticos.) E. Escomel.—p. 67.

84. **Gallstone Surgery in Peru.**—Wieland relates that gallstone trouble requiring operative measures is comparatively rare in Peru. The first operation of the kind there was in 1904, and he has been able to find records of only twenty operations on the biliary apparatus to date. The few fatalities were due to the long delay before operative treatment was accepted.

85. **Alligator Pear in Antidiabetic Diet.**—Escomel for some years has been calling attention to the fruit of the *Persea gratissima*, a kind of laurel, as a welcome addition to the diet of diabetics. It is a common fruit and he says that it does not contain starch or sugar. His analysis showed 34.1 per cent. fat; 3.79 per cent. albuminoid substances and 3.5 per cent. ash, with 38 per cent. water, and 0.4617 per cent. phosphates. (The fruit is known as the alligator pear, avocado, vegetable marrow and midshipman's butter. An editorial was devoted to it in The Journal, March 18, 1916, p. 898.)

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January-February, XXVI, No. 146-147, pp. 5-141

86 *Anterior Cephalocele; Three Cases. M. H. Vegas and J. M. Jorge.—p. 5.
87 *Organic Nature of Sydenham's Chorea. A. Gareiso.—p. 35.
88 *Milky Ascites. (Etio-patogenia de los derrames quilosos.) C. B. Udaonda and M. R. Castex.—p. 58.
89 *Pelvic Varicocele. C. A. Castaño.—p. 76.
90 Pigmented Retinitis with Atrophy of the Choroid and Retina. (Atrophya gyrata chorioideae et retinae.) P. Argañaraz.—p. 102.
91 *Acute Postpartum Dilatation of Stomach and Duodenum. P. Ramos.—p. 109.
92 *Sclerosis of Pulmonary Artery. (Caso de enfermedad de Ayerza.) P. M. Barlaro.—p. 121.

86. **Anterior Cephalocele.**—In each of the three cases of which an illustrated description is given, the cephalocele was between the eyes. The patients were children of 11, 6 and 1 or 2 years old. They seem normal otherwise except that the older child has contracture of the right arm and limps a little with the right leg. The parents of this child refused to permit an operation; the encephalocele extended over the root of the nose and part of the right cheek, but was not prominent enough to be very noticeable from the side. In the younger child it formed a tumor round and large as an orange which was easily removed. In the other child the tumor spread from eye to eye and a little on the cheeks, and was increasing in size. This too was easily removed. The tumors seemed to be of the nature of hernia but they evidently date from early embryonal life, before the formation of the face. Hydrocephalus does not accompany this anterior type of cephalocele, as a rule. It forms a tumor of a gelatinous consistency, and its excision was not followed by any appreciable symptoms. In the 6 year old child the cleft in the bone was so broad that Vegas and Jorge closed it with a bone periosteum flap from the eleventh rib. The tumor had reformed in this case after it had been resected three times.

87. **Organic Nature of Chorea.**—Gareiso reports that signs of encephalitis were evident in forty-nine of the fifty cases of Sydenham's chorea tested for the Babinski and other indications of organic disease. The reflex responses varied from day to day in different cases. He gives the detailed findings in twenty-eight cases. As the chorea subsided, the signs of the superficial, transient encephalitis inducing the choreic movements subsided with it.

88. **Milky Ascites.**—Cancer of the stomach and liver was the primary cause of the chylous ascites in the first of the five cases reported. In the others, aleukemic glandular disease, cancer of the stomach or tuberculous peritonitis—all chronic processes.

89. **Pelvic Varicocele.**—By this term Castaño means permanent varicose enlargement of certain veins in the female pelvis. It may be secondary or primary, and it is undoubtedly responsible for the complaints of many women who are regarded too often as merely neuropathic or hysteric. Returning varicocele at the menses may be responsible for dysmenorrhea in many cases. He reviews the literature on the subject, from Richet in 1854 to A. Wall in 1916, and discusses the clinical picture according to the vein involved. The women affected are full-blooded, inclined to constipation, and minor thyroid insufficiency. For the same reasons as in men, the left side is predominantly affected. Girls inclined to overstudy and neglect hygiene bring on this congestion in the pelvic organs, starting the varicocele. Sitting on a hard piano stool for hours to practice, without heed to menstruation, also favors local congestion. It is easily corrected at first by repose, but after the veins become enlarged the varicocele is rebellious to simple measures. Other factors may be long standing, running the sewing machine, excessive dancing and tight lacing, erotic stimulation from plays, moving pictures, etc. Mechanical, anatomic, infectious and constitutional factors may afford a predisposition.

91. **Acute Dilatation of the Stomach Postpartum.**—Ramos cites from the literature of the last nine years seventeen cases of acute gastroduodenal dilatation following childbirth. He then describes a case from his own practice. His experience in this case enabled him to make a retrospective diagnosis of a similar case a few years before in which at the time the condition was not recognized. The dilatation may occur from paralysis of the stomach or from occlusion of the mesenteric artery, but probably both factors are associated and aggravate each other. Labor in his case had been brief but the midwife had repeatedly tried to expel the afterbirth by expression. Ramos finally had to remove it by hand, without anesthesia. He left the woman in good condition but he was recalled in four hours as she was vomiting constantly and suffering from extreme thirst, the pulse 140, thready, the expression anguished. She said her stomach felt as if there was an iron bar in it. The condition grew worse every minute until the woman was turned to lie on her stomach in the knee-chest position, when gases rushed out of the stomach with a continuous rumble, the abdomen sank in, and the whole clinical picture cleared up as by magic. He thinks it probable that many instances of acute postpartum dilatation of the stomach have been masked by the obstetric conditions and have escaped recognition. The abrupt changes in the intra-abdominal pressure and the manipulations during the third stage of labor are liable to induce the arteriomesenteric occlusion. In his case the peristalsis observed in the stomach and the sudden disappearance of the disturbances indicate that probably constriction of the duodenum was the primary trouble and not paralysis of the stomach.

92. **Sclerosis of Pulmonary Artery.**—Barlaro describes a case of what he calls Ayerza's disease, in a woman of 44. The face was very cyanotic, pulse 80, regular, the right heart dilated. The red count was 6,680,000. She had usually three attacks of dyspnea during the twenty-four hours, relieved by expectoration. This had been going on for three years. Occasionally there was blood in the sputum. She was inclined to be chilly and her feet were always cold. Barlaro gives a roentgenogram of the case and discusses the various affections with which this clinical picture from sclerosis of the pulmonary artery is liable to be confused. Syphilis is prob-

ably responsible for the trouble in many cases; this was evident in the case here described. Barlaro adds that probably some of the cases were of this type which have been recorded as primary and chronic myelogenous polycythemia —Vaquez' disease—especially in the form with enlargement of the spleen. This is particularly likely in the cases with chronic bronchial catarrh or pulmonary emphysema or a persisting cough through two or more years, with blood at times in the sputum.

Siglo Medico, Madrid

February 17, LXIV, No. 3297, pp. 97-112

93 *Morphology of the Blood in Leprosy. S. de Buen.—p. 98. Commenced in No. 3296, p. 82.
94 Rebuilding the Face. (Las restauraciones buco-faciales.) F. Aguilar.—p. 105. Continuation.

93. **The Blood in Leprosy.**—De Buen gives the blood findings in thirty-six lepers in Granada. No special leukocyte formula could be discovered and eosinophilia was not common. Mononucleosis was frequent, and Arneth's index was displaced toward the left, but no data of importance could be deduced from the red or white count.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

January 27, I, No. 4, pp. 201-272

95 *Eosinophilia, Anaphylaxis and the Nervous System. D. Klinkert. —p. 202.
96 Family Care of the Insane. (Een nieuwe richting in de verpleging der geesteszieken.) J. L. Van Lier.—p. 213.
97 Resin-Containing Substances in Treatment of Wounds. (Harshoudende geneesmiddelen bij wondbehandeling.) P. Van der Wielen. —p. 221.
98 Brain Abscess Consecutive to Frontal and Ethmoidal Sinusitis; Two Cases. H. J. L. Struycken.—p. 224.

95. **Anaphylaxis, Allergy and the Nervous System.**—Klinkert presents an array of arguments to prove that all the mysteries of eosinophilia and anaphylaxis can be explained by assuming that the nervous system in certain persons is exceptionally sensitive. It reacts to irritation below the threshold of reaction in the normal. It may be naturally thus abnormally irritable or the irritability may be from cumulative action of toxins. The only difference between an idiosyncrasy to a drug and the phenomena of anaphylaxis is one of degree. With the drug idiosyncrasy, the phenomena occur at once, while with the phenomena we call anaphylaxis there has to be time for cumulative action, the albuminous substances inducing the reaction not passing off through the kidneys but accumulating until the hypersusceptible nervous system is finally overcome by their toxic action. He explains how all the phenomena in question are of unmistakable nervous origin. This is particularly evident in the changes in the skin around the area where a tuberculin salve is rubbed on the skin of a tuberculous child, and the appearance of an entirely symmetrical reaction on the corresponding area on the other half of the body. Other evidence is the reaction in the other eye also when tuberculin is instilled into one eye. Everything indicates that the Pirquet tuberculin reaction is an angioneurotic process. This explains the local eosinophilia, as this is the faithful accompaniment of all conditions of irritation in the secretory nervous apparatus. That part of the nervous system which is the most susceptible feels the effect of the irritation first and foremost, and we thus encounter anaphylactic asthma or enteritis, convulsions, urticaria, hyperesthesia of the skin or prurigo, epilepsy or clinical neuroses as the case may be. Intermittent swelling of the joints, as with serum sickness, must also be regarded as a neuro-arthritis. He explains how the manifestations of Poncet's tuberculous rheumatism, anaphylactic shock, and the natural and the acquired idiosyncrasy to horse serum all fit into this frame of nervous allergy. The albumin in the alien serum is not passed off as such through the kidneys and it irritates the nervous system. On injection of the antigen, the phenomena of shock and the fixation of the specific ferments occur almost simultaneously, and this fact has been erroneously interpreted to mean that there is a direct causal relation between The truth is, rather, that on account of the speed with e phenomena of the nervous shock develop, the defen- anism of the specific ferments has no opportunity to ss. afford effectual aid. In conclusion Klinkert discusses the so-called passive anaphylaxis, showing that it is in reality an active anaphylaxis. He also presents evidence to prove that the phase of anti-anaphylaxis is merely a phase of exhaustion on the part of the nervous system. The result is a refractory phase. The condition of allergy, he reiterates in conclusion, is not an element in immunity. It is the consequence of the cumulative action of toxins on the nervous system.

Hospitalstidende, Copenhagen

January 24, LX, No. 4, pp. 73-96

99 *Measuring and Recording Movements Possible to a Joint. (Om Maaling af Leddenes Bevægelsesforhold.) J. Helweg and G. Wiltrup.—p. 73.

January 31, No. 5, pp. 97-120

100 The Uric Acid Diathesis. (Undersøgelser over den urinsure Diatese.) I. P. Chrom.—p. 97.

99. **Curve of Motor Range of Joints.**—Helweg and Wiltrup expatiate on the advantages of an exact record of the movements possible to a diseased joint. Such curves aid not only in diagnosis and prognosis but also as a guide to treatment. They analyze the movements of the principal joints and give a table recording the range of movements in a typical case. They measure the movements always as starting from the position of the joint in the attitude of military attention, erect, or reclining horizontal, the arms close to the sides, the palms against the thighs, the legs extended, the feet at right angles to the leg. The movement of the joint from this starting position is recorded by the figure of the angle when normal movements are impossible.

Hygiea, Stockholm

January 31, LXXIX, No. 2, pp. 49-96

101 *War Injuries Affecting Voice and Speech. (Om krigsskador å röst- och talorganen.) E. Stangenberg.—p. 49.
102 *Case of Scarlatinal Mastoiditis with Arrosion of Sinus Wall and Fatal Spontaneous Hemorrhages. A. Hæggström.—p. 58.

101. **War Injuries of Voice and Speech.**—Stangenberg was sent to Berlin to study in particular war wounds and functional neuroses affecting the organs of speech. His investigations were mainly in Gutzmann's service where 426 patients of this class have been under treatment. He describes a few typical cases of spastic dysarthria in previously healthy men who were much improved but not cured by over five months of exercises in speaking. One officer after a shell shock and minor injuries had complete aphasia, dysarthria and dysphasia, with no improvement to date under eight months of treatment. The results on the whole are meager, and treatment requires great skill and extreme patience.

102. **Hemorrhage from Scarlatinal Mastoiditis.**—The girl of 7 developed otitis media in the course of scarlet fever with continuous high temperature. By the second day of the otitis an operation for mastoiditis became necessary. Six days later there were profuse hemorrhages from the fistula and necropsy showed the side wall of the sigmoid sinus completely arroded. The hole, as large as a pea, was in the wall of the sinus where it had been exposed at the operation. It had been apparently sound then. There was no thrombosis except in the bulb of the jugular vein. Ligation of the jugular vein on account of the thrombosis was followed by profuse hemorrhage and the child died a few days later. Hæggström has found twenty-five similar cases recorded in the literature, in which osteitis of the sinus led to spontaneous hemorrhage. In five of the ten acute cases, scarlet fever was responsible. Eulenstein advises in such a case to expose the transverse sinus and apply compression to it, and then to open up the mastoid process and seek the bleeding vessel and tampon it at the spot. His patient given this treatment recovered. On the other hand, if the bleeding comes from the arroded sinus not long after a mastoid operation, an ordinary compressing bandage may prove all that is necessary. Two-thirds of the patients treated in this way recovered. It would be safer, however, Hæggström adds, judging from his own case, to compress the sinus by working a tampon between the dura and the wall of the sinus from a trephining opening made over the transverse sinus.

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ACUTE POLIOMYELITIS

EARLY DIAGNOSIS AND SERUM THERAPY *

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NEW YORK

I. DIAGNOSIS

So far as we know, paralysis is the only undesirable result of acute poliomyelitis. Consequently, therapeutic effort should be directed to prevent this accident. It is becoming increasingly evident that most patients with the disease never develop muscular weakness, and, indeed, that paralysis is an accidental and incidental occurrence in the latter part of the course of an acute systemic infection. No treatment, save that to make a febrile patient comfortable, is needed, therefore, in many cases. But because the chance of crippling exists, we must be prepared to use promptly any safe methods which will prevent the establishment of damaging lesions in the cerebrospinal nerve tissue.

In order to discuss intelligently, however, the use and value of any procedure designed for this purpose, it is necessary first to study in detail the clinical course of the disease in man. Furthermore, it is obvious that to make statistical comparisons of untreated and treated series of cases is an impossible method of reaching a proper valuation of the serum therapy in this disease. The apparent fluctuation in virulence of the virus in different localities and periods during an epidemic, the wide range of individual susceptibility and, finally, the peculiar sequence of events in the clinical course of the disease itself make up an array of forces difficult to equalize when we try to weigh the effect of treatment by comparing untreated and treated groups.

There remains, then, the more tedious but essential task of studying individual examples of the disease. These have been selected from the 300 as examples of the various types. By comparing untreated and treated instances from the same locality and period, and especially by comparing the spinal fluid with regard to the hour of its removal in the course of the disease, a more definite judgment of serum therapy in poliomyelitis may probably be made.

The untreated cases have been arranged in three groups according to the clinical course. The first group, called the dromedary group, shows the curious phenomenon of two different periods of illness with an interval of well-being. In the second group this period of comparative well-being is not present, but there is a sustained period of indisposition of varying intensity.[1] This is called the straggling group. In the third group only do we have all the signs pointing from the start to meningeal and nervous involvement. This we have called the sudden onset group. A striking thing is that the second portion of the first two groups is very similar to the whole course of the sudden onset group.

There will be no further routine description of the clinical picture of the disease than that which can be derived from reading the case reports presented here. One physical sign of great importance, however, must be mentioned especially. It depends on the fact that in acute poliomyelitis any manipulation which brings about anterior bending of the spine causes pain and therefore is resisted by the patient. The resulting stiffening of the body has generally been loosely described as "stiff neck" or "Kernig's sign," but there is an essential difference between these reflex phenomena of meningeal irritation and the voluntary protective rigidity assumed by the patient with poliomyelitis to prevent anterior flexion of the spine. This conscious effort is often carried to a moderate degree of opisthotonos and is the cause of the unwillingness of children with this disease to be picked up and handled even by the mother. Attention was called to this sign in the monograph from the Rockefeller Institute in 1912, and we refer to it here as the spine sign.

In the first two groups there develops a picture of general systemic infection from which the child appears to recover completely, or in part, and then to receive a second blow directly on the cerebrospinal tract. Because of the two distinct groups or humps of symptoms, the analogy to the arrangement of the dromedary's back was taken to express the type figuratively. The temperature curve often shows two elevations, but the figure refers to all the signs and symptoms of each group or hump, whether or not there is a rise of temperature in both. The total duration of the combined phases may vary from a few hours to many days, while the intensity of either phase, the systemic or the meningeal, may touch the extreme of violence or such mildness as to escape detection. In the systemic stage, or first hump, of a well marked case the clinical picture is that of almost all of the acute infections of childhood — a flushed, uncomfortable, feverish child; in the meningeal stage, or second hump, there are added the special signs and symptoms of meningeal irritability. It becomes at once obvious that the so-called "abortive" types are in all probability examples of the disease in which the first stage or hump

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* Owing to lack of space, this article is abbreviated in THE JOURNAL by omission of tables and many case reports. Reprints of the complete article may be obtained from the author.

[1] The material which forms the basis of this report is drawn from among 300 or more cases observed on Long Island by the diagnosticians of the New York State Department of Health, working from the laboratory at Roslyn. The cases have been selected from groups seen by various members of the diagnostic staff to illustrate certain points, and have been presented as an essential part of the whole discussion.

constitutes the entire course of the malady, the meningeal stage either never occurring, or, if it does, in so slight a form as to pass unrecognized. The term "abortive" consequently gives a wrong impression, for the termination of the disease at the end of the systemic phase is the more usual occurrence. It would be more correct to speak of acute poliomyelitis, with or without paralysis. In order to discuss the mechanism of this peculiar series of events it is necessary to consider certain experimental problems which bear on the disease.

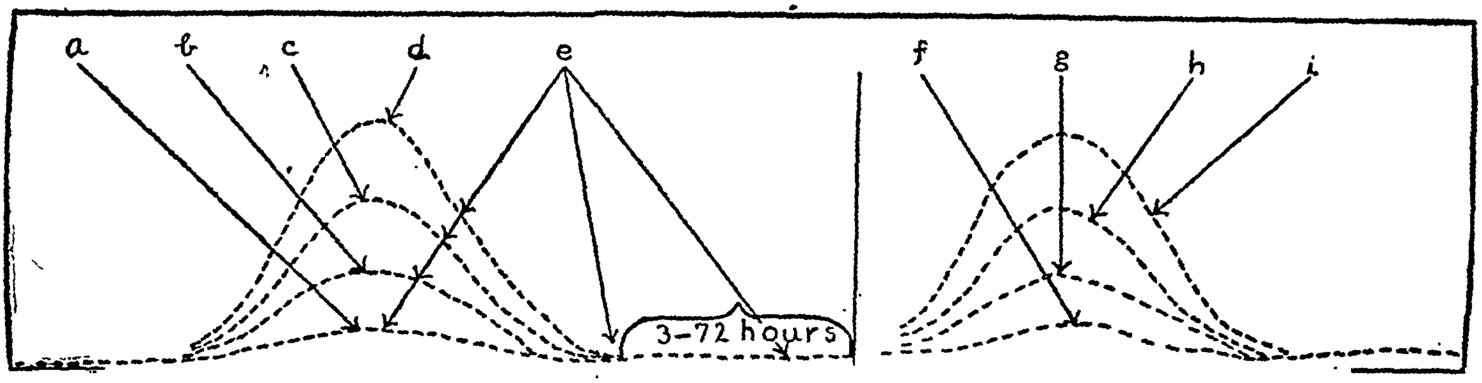
UNTREATED CASES

DROMEDARY GROUP

Case 1.—*History.*—S. L., boy, aged 9 years, of Northport, L. I., Sept. 8, 1916, complained of headache and fever. This lasted twenty-four hours. He was then all right for the ensuing eight days.

September 17: The headache and fever returned (eight day interval). He was constipated for the following two days.

September 19: The child vomited several times during the last eighteen hours. His temperature was 100.4. There was muscle tenderness in the thighs and calves. There was a suggestion of left facial weakness. There was no spine sign. Lumbar puncture was performed at forty-eight hours; the fluid was clear, the pressure normal, cells 40. Globulin was negative. No further paralysis developed.



To left of vertical line, period of general infection, before penetration of choroid. Puncture should be repeated every eight to twelve hours to catch beginning of meningeal invasion. Any combination of curves in this period and the period of meningeal invasion possible. Termination of disease most frequent in this period. To right of vertical line period of meningeal invasion. Serum most valuable in first twelve hours. Group *f* does not need it. *a.* Child dull for a few hours; sits around; mother forgets about it after a day. *b.* Child has slight rise of temperature—99; constipation, "green apples," etc., as cause; looks tired; may be irritable. *c.* Child definitely sick; vomits; temperature from 99 to 101; irritable, flushed; looks actively ill. *d.* Severe acute general infection—glassy bright eye—resentful look, drowsiness and irritability alternating; temperature 102; vomiting or not; flushed; no meningismus. *e.* Lumbar puncture fluid clear; pressure slight or greatly increased; amount increased; cells from 0 to 5; globulin 0, —, ± or +. *f.* Very slight spine sign, headache; fluid; pressure + + +, clear; cells from 10 to 100; globulin +, —, + +; usually no paralysis. *g.* Slight spine sign; hyperesthetic; reflexes + + or irregular; spinal fluid clear, pressure + +; cells from 100 to 300; globulin + +; may develop transient or facial paralysis. *h.* Definite spine sign; headache; reflexes + +; hyperesthetic; spinal fluid clear or slightly hazy or flocculent; cells from 200 to 700; pressure moderate; chance of paralyses great. *i.* Striking meningismus; spinal fluid hazy, pressure normal to +; cells from 500 to 2,000; globulin + + +; stupor, twitchings; sure paralyses or death.

Comment.—This case illustrates the common phenomenon met in this disease of two distinct febrile periods with a free interval. Here the first period lasted twenty-four hours, the interval eight days (rather longer than usual), and the second period from eighteen to twenty-four hours. In the last period the facial weakness developed.

This we have called the "dromedary" type of case because of the two "humps" in the temperature curve. The significance of these cases is considerable, and a discussion of them will be deferred until other examples of the type have been presented.

STRAGGLING GROUP

Case 17.—*History.*—M. A., boy, aged 4½ years, of Fort Washington, L. I., Aug. 17, 1916, had been drowsy and very irritable for several days.

August 18: This morning the child had fever. There were headache and pain in the back of the neck last night, about twelve hours ago. The child was constipated for several days previous to this, and was given numerous cathartics without success. The mother states that last night she gave the child castor oil but he vomited it. The family physician saw the child about an hour ago and found his temperature 103. The boy was lying in bed and apathetic. The eyes were staring and glassy in appearance. The tonsils and pharynx were considerably congested, but without exudate. The heart and lungs were negative. The abdomen was normal. In the extremities there was no paralysis or muscular weakness. The knee jerks were markedly exaggerated, + + + +, most marked on the left side. Kernig's sign was marked on both sides, most on the left. The skin reflexes were active. There was slight rigidity of the neck, and hyperesthesia. Spinal puncture was performed at twelve hours. The fluid was clear under pressure. About 12 c.c. were obtained. The cell count was 250.

September 2: The patient seemed to be completely well twenty-four hours after puncture and has had no subsequent paralysis or complications.

Comment.—This is an example of the unimportant impression that the early days and hours of the disease make on the mother. Yet the suggestion is clearly of an indefinite period of "out of sorts" preceding the headache of August 18.

SUDDEN ONSET GROUP

Case 26.—*History.*—D. S., girl, aged 14 years, of Babylon, L. I., Aug. 21, 1916, had a gone feeling in the stomach.

August 22: The patient had a pain in her neck and right shoulder. The temperature was 102, pulse 130.

August 23: The patient had a slight pain in the shoulder. Examination revealed no paralysis. The left knee jerk was less than the right. The patient was irritable and had slight stiffness of the neck. She was menstruating. Puncture was performed at forty-eight hours. There was no increase in pressure; 504 cells.

September 3: The patient had completely recovered, without paralysis.

Comment.—It is a question whether the first complaint of "gone feeling in the stomach" represents the beginning of the disease or the beginning of central nervous system involvement. The early appearance of pain in the neck and shoulder suggests the latter. Consequently the case is grouped among those with "sudden onset." The high cell count at such an early stage would have made a paralysis not unexpected. None developed.

Case 31.—*History.*—K. McL., boy, aged 18 months, of Northport, L. I., had a sister who had the disease. Aug. 19, 1916, the child was observed in bed sleeping, with no history of disease other than slight diarrhea for two days. Constitutionally he had seemed well, and was awakened from sleep for the purpose of examination and temperature. This child was well on going to bed after playing all day. At 1 a. m. the temperature was 105 F. Eyes, ears, nose and throat, heart, lungs and abdomen were normal. The neck and spine were stiff and tender. The head would not flex on the chest. Suspension by the head and buttocks caused arching of the back and pain. The Kernig sign was positive in both legs, and no paralysis was made out in any part of the body. The reflexes were normal. Spinal puncture revealed clear fluid under normal pressure with a moderate globulin test and 320 cells. This patient was given serum, and his further history is related in connection with that group of cases.

Comment.—In this instance the mother objected to having the child awakened at 1 o'clock in the morning to have his temperature taken. The diagnostician of the health department insisted on the ground of the slight intestinal disturbance of the previous day and the fact that the sister was ill with frank poliomyelitis. This course was justified by the finding of the high temperature and high cell count. If this case had not been observed at this time, but the first observation had been made the following morning and the child found with high fever and meningeal irritation, it would have been considered a typical example of what the English call "paralysis of the morning." As the child went to bed well and waked up ill, the case would have been reported as one of sudden onset; fortunately the parents remembered the very slight intestinal upset of the previous two days which had not been sufficient to make the child stop playing. The meningeal invasion must have taken place at sometime between 6 or 7 in the evening and 1 o'clock in the morning.

CASE 35.—*History.*—W. Z., boy, aged 2 years, of Great Neck, L. I., was well until the afternoon of Aug. 12, 1916, when he was feverish and listless. He did not vomit. Spinal puncture revealed normal pressure with the fluid clear and increased in amount, no cells, with a negative globulin test.

August 13: The symptoms were the same as the day before. Spinal puncture at thirty hours revealed the fluid under moderate pressure and 90 cells. The child was sent to the hospital at Roslyn.

August 31: The child's temperature was 99.8. There was weakness of the lumbar muscle with lateral curvature in the left thoracic region. Slight spinal tenderness was observed.

Comment.—This is an instance of short course. Puncture was made a few hours after the onset of the symptoms, and showed a negative cell count and no globulin. Twenty-four hours after with the development of slight spinal signs the spinal fluid showed 90 cells. In this case there was rapid improvement, and it was not until several weeks after the acute disease that slight weakness of the lumbar muscles was discovered. In this case the period of invasion of the meninges was indicated by the consecutive lumbar puncture.

CLINICAL COURSE OF THE DISEASE: INTERPRETATION

Flexner and Amoss[1] have reported certain experiments bearing on the localization of the virus and the pathogenesis of poliomyelitis. They showed that, following the intravenous injection of the virus of poliomyelitis in monkeys, and with subsequent sacrifice of the animals at different intervals, the virus was found in the spleen and bone marrow and later in the posterior root ganglia, and, finally, in the brain and spinal cord. In other words, notwithstanding the fact that the virus of poliomyelitis has a neurotropic tendency, it is withdrawn from the general circulation primarily by the spleen and bone marrow, this event occurring shortly after infection, and before the attachment of the virus to the central nervous system. In the same report the experiment is described of the insusceptibility of monkeys to the virus of poliomyelitis, when as much as 50 c.c. is injected intravenously. Animals survive under this treatment with no signs of central nervous system disturbances. If, however, an aseptic meningitis is set up by means of an intradural horse serum injection preparatory to the intravenous inoculation of the virus, the animal succumbs to the disease.

It is further reported that when tremendously large doses of virus are given intravenously, from 250 to 500 c.c., the animals come down with the disease. The conclusions from these two suggestive experiments are that the overwhelming attack produced by the large dose breaks down the defensive power of the choroid plexus, and admits the virus to the cerebrospinal spaces. In the other instances the choroid plexus is so injured by the intradural injection of horse serum that it is no longer able to exert its usual barrier action against the toxic agents in the blood. If these experiments are kept in mind, the clinical course of the cases just described can be subjected to a more logical interpretation. A suggestive analogy becomes apparent between the first febrile period of the dromedary or straggling types, and the phenomena of lodgment of the virus in the spleen and bone marrow of monkeys after intravenous inoculation. Likewise the second hump in the human case, with its central nervous system involvement, corresponds to the late disclosure of the virus in the central nervous tissue of the monkey. Experiment has shown that the virus gains entrance with difficulty to the central nervous system tissues of monkeys subjected to intravenous inoculation. In human subjects the number of cases recognized as never giving the slightest indication of central nervous system invasion is steadily growing with our experience.

In families in which a frank paralysis case occurs, there are found so frequently other children who present persistently the same symptoms which the paralyzed child has shown in the preliminary hump that one is led to suppose that these may be examples of infection in which no penetration of the meninges occurred.

In the straggling group the same interpretation applies, the only difference being that these individuals present a continuous course with a fusion of the symptoms of the two stages. Sudden onset cases may be looked on as examples of the malady in which the systemic stage has been overlooked because of its triviality. In this group the spectacular and violent picture of meningeal disease dominates and drives the memory of the slight preceding indisposition from the mother's mind. It is difficult under these circumstances to get from the family any history of the child being unwell during the preceding days.

We have included in this group of sudden onset Case 41, in which the child was punctured at 1 a. m., having gone to bed well. This case might have been reported as one in which the child awoke with a stiff neck and high fever. Yet the parents of this child remembered that for two days previously there had been a slight and unimportant disturbance of the bowels. In other words, this case with sudden meningeal onset was an instance of typical dromedary course in which there was a preliminary hump so mild as almost to escape appreciation. Case 28, E. E. L., is another instance in which no history of early indisposition was obtained at the time of the acute onset. But later on, after the excitement of the affair was over, the mother recalled that the child complained of headache and malaise a day or two before.

In a few instances lumbar puncture has been made during what apparently was the systemic stage, and the fluid itself at this stage has been practically normal. There may be a slight suggestion of globulin increase, as appeared in two or three cases, but the pressure and volume of the fluid, in almost all instances, has been increased. The second puncture in these cases made after the signs of meningeal invasion have appeared has shown fluids with cell counts which were all above normal.

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[1] Flexner and Amoss: Jour. Exper. Med., 1914, **20**, 249.

The accompanying scheme shows the plan of the foregoing interpretation of the disease. A recognition of the clinical course as described may have important bearing on the use of serum intraspinally. For as the experiments of Flexner and Amoss indicate, the injury of the choroid plexus of the meninges by the horse serum injection renders the animal more susceptible to central nervous system involvement. The question might arise, therefore, of the wisdom of giving an intraspinal injection during the period of systemic infection, or first hump. Such a procedure might conceivably convert the ordinary and usual case in which the systemic stage constituted the whole expression of the disease into a fully developed dromedary type with secondary meningeal invasion and paralysis. It must be remembered, however, that horse serum produces a more violent meningeal reaction than does the homologous human serum. But the latter is by no means a negligible quantity, for the severe pictures of meningeal irritation, with vomiting, opisthotonos and sometimes convulsions which follow human serum injections, are memorable events. Notwithstanding the intensity of these symptoms and their comparative frequency, no undesirable results have been seen to follow which are referable to the meningeal irritation. The alarming impression, however, that the child has been made much more acutely ill by the treatment is unwarranted, as the subsequent course has already proved. However, it has also been shown that after injury, set up by horse serum injection, if immune monkey serum be introduced into the canal the animal is protected from the results of intravenous injection of virus. Consequently the early use of immune human serum in human cases might be looked on as presenting possible alternative effects, on the one hand breaking down the choroidal defense, and on the other supplying the necessary antibody to neutralize the invading micro-organisms.

The discussion and interpretation of the clinical course of the disease has been of necessity an introduction to the presentation of the series of cases in which serum therapy has been carried out. The treated cases will be presented in groups as seen by different diagnosticians of the department. Some of these cases have been utilized as examples in the discussion of the clinical course of the disease.

SERUM GROUP

During the course of the study we were frequently impressed with the number of cases showing low cell counts in the first twelve to twenty-four hours after the meningeal invasion in which paralysis did not develop, and likewise the many patients with very high counts who became paralyzed. It was hoped that definite prognostic assistance might develop from this observation, but a careful subsequent analysis does not firmly establish the assumption. In fatal cases in many instances there were cell counts in the neighborhood of 1,000 or more. In the latter part of the epidemic when serum was plentiful, and the cases less violent, many patients with low cell counts were treated and recovered without paralysis. The deduction as to the therapeutic value of the serum treatment in these instances must be carefully guarded because of the fact that in many untreated cases with low cell counts the patients also escaped paralysis.

The tables constructed to show the number of hours elapsing between the onset of meningeal symptoms and the performance of lumbar puncture have been prepared with a view to comparing the results in the untreated and treated cases. A glance at these tables will show that while it is not an absolute fact that patients with a low cell count did not develop paralysis or that those with a high cell count always did, it is quite obvious that the tendency of the patients with the higher cell counts in the early hours is toward paralysis. It is indicated from these tables that after thirty-six hours the cell count in the spinal fluid is of little or no prognostic value whatever. This observation corresponds to that[2] reported in 1912. But in the cell counts in the first twelve or twenty-four hours there seems to be something of prognostic significance, as mentioned before in the general introduction. Group comparisons are not particularly valuable, especially in view of the difference in the severity of the cases according to the period in the epidemic during which they occurred.

REPORT OF CASES AS DESCRIBED BY EACH DIAGNOSTICIAN OF THE DEPARTMENT

PATIENT SEEN BY DR. HORAN

Case 17.—*History.*—M. S., boy, aged 2 years, of Northport, L. I., Sept. 11, 1916, was feverish, vomited once and was constipated.

September 12, the fever continued. The temperature was not taken.

September 13: The child was apparently well, and was up and about today and the following day.

September 15: The temperature was 103. The child vomited last night. The knee jerks were hyperactive on the left and diminished on the right. The neck was slightly stiff. There was a slight spine sign. There was no paralysis. There was slight weakness of the right leg in the sural group and anterior tibial. Lumbar puncture, at eighteen hours, revealed the fluid clear under increased pressure. The cell count was 640. Twelve c.c. of serum were given.

September 16: The temperature was 101.5. The neck was stiff and the spine sign was present. There was no paralysis or weakness. The knee jerks were unchanged. Lumbar puncture revealed clear fluid under increased pressure. The cell count was 700. Twelve c.c. of serum were given.

September 18: The temperature was 99.5. There were no new symptoms or signs.

September 23: The child was stuporous. There was no paralysis or weakness.

September 26: Weakness of the right leg came on this morning.

September 29: There was no return of power in the paralyzed leg.

Comment.—This was a very sick child. The puncture showed 640 cells and was done eighteen hours after the onset of the second hump. Two doses of serum were given, 24 c.c. in all. An interesting feature is the delayed appearance of the paralysis, eleven days after the onset of the second hump.

PATIENT SEEN BY DR. GARLICK

Case 20.—*History.*—H. K., boy aged 19 months, of Valley Stream, L. I., Aug. 26, 1916, felt feverish, the mother noticed, and later in the day began to vomit.

August 27: The child was very irritable, complained of pain in the back of the neck and head, and was extremely drowsy. There was no diarrhea or constipation. The child lay in bed with slight retraction of the neck. He was very irritable and evidently was in pain. The eyes were normal. The throat was congested. The cervical and inguinal glands were palpable. The lungs and heart were negative. There was slight weakness of the abdominal muscles. The extremities showed no apparent weakness. The knee jerks were

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2. Monograph 4, Rockefeller Institute Series, 1912.

absent. Other reflexes were normal. There was a slight Kernig sign on both sides. Meningismus was marked. The temperature was 102, pulse 140, respiration 18. Puncture, after thirty-six hours, revealed slightly turbid fluid under slight pressure. The cell count was 950; globulin +. Fifteen c.c. of serum were given.

August 28: The patient was not so well. The diaphram was paralyzed. Respirations were rapid and difficult. The child was slightly cyanotic. There was no further paralysis. Fifteen c.c. of serum were administered.

August 29: The child was extremely cyanotic. The respirations were rapid, shallow and irregular. The pulse was 160, and very weak. The child grew worse and died at 3 p. m. from respiratory failure. Lumbar puncture was made probably thirty-six hours after the onset of meningeal symptoms. Weakness was already present. The cell count was 950.

PATIENTS SEEN BY DR. LEAKE

Case 22.—*History.*—O. N., boy, aged 19 months, of Hempstead, L. I., Aug. 19, 1916, became restless and irritable. On the following day he was drowsy all day long and his mother stated that he had fever. He had not vomited.

August 21: Yesterday and this morning the child's arms have twitched convulsively at times. The temperature was 100.6. The child lay on his back in no apparent pain. His face flushed and the eyes were unusually bright. The neck was extremely rigid, and the child cried out when it was flexed. The throat was red. The cervical and inguinal glands were palpable. The chest and abdomen were negative. The muscles of the face and eyes were in a semispastic condition. The knee jerks were very sluggish. The Kernig sign was mild. When placed on his feet the patient was markedly ataxic. Lumbar puncture revealed a clear fluid under slightly increased pressure. The cell count was 620; Noguchi + + +; Pandy + + +; Ross-Jones + + +. The patient was very sick and apathetic. At 3:30 the same day a lumbar puncture was performed and 15 c.c. of clear fluid withdrawn. Fifteen c.c. of serum were injected intraspinally. The child appeared bright. There was no definite paralysis, but the knee jerks were absent. It was desired to remove the child to a hospital, but there was no place to take him at the time.

August 22: At 9:30 a. m., 15 c.c. of clear fluid were withdrawn by lumbar puncture. Fifteen c.c. of immune serum were given intraspinally. The child appeared brighter. There was no definite paralysis, but the knee jerks were absent.

August 27: The child was drowsy. There was partial paralysis of the left lower extremity.

August 31: At 4 p. m. the temperature was 98. Paralysis of the left extensor groups continued. There was weakness of the same group in the right leg. Ankle and knee jerks were absent. There was slight spinal tenderness.

Comment.—Here the diagnostic puncture showing 620 cells was done about thirty hours after the onset of symptoms. Serum was not given until thirty-five hours after. The case was a very severe one. Paralysis did not appear until the seventh day. Two doses of serum were given, 30 c.c. in all.

Case 25 A.—*History.*—C. L. P., boy, aged 10 months, of Sayville, L. I., Aug. 24, 1916, had green stools and a temperature of 102. Oil was given.

August 25: The child appeared much better and did not vomit. The temperature was 98.6.

August 26: The child was rather drowsy and irritable.

August 27: The temperature was 103.2. The fontanel did not bulge. The eyes were negative, the throat rather red. There was no rigidity of the neck. The cervical and inguinal glands were enlarged. The chest and abdomen were negative. The knee jerks were exaggerated, especially on the right side. Apparently there was some weakness of the right quadriceps and psoas. Lumbar puncture revealed clear fluid under increased pressure. The cell count was 50 at seventy-two hours.

August 29: Ten c.c. of serum were given at 11 a. m., at seventy-two hours. The temperature at this time was 103, and respirations about 80 per minute. The temperature rose in a few hours to 104, the respirations became more shallow, and at 7 a. m. it was thought that death would supervene. In a short time it was thought that the child could not swallow well. Since this time there has been a progressive improvement.

August 31: The child was reported as seemingly perfectly well.

September 1: Complete recovery had occurred. Paralysis of the pharynx was only transitory.

Comment.—This patient showed 50 cells at seventy-two hours. Ten c.c. of serum were given at seventy-eight hours. There was transient weakness of swallowing. The child was much worse after the administration of serum. The patient was breathing 80 per minute at the time the serum was given. The serum should have been withheld, but the father, a physician, insisted that it be given.

PATIENT SEEN BY DR. DRAPER

Case 28.—*History.*—E. E. L., girl, aged 3 years, 10 months, of Oyster Bay, L. I., was suddenly seized at 10 a. m., Aug. 21, 1916, with pain in the back of the neck. She continued to play until 12 o'clock, when she gave up and began to be feverish. She became rapidly worse. At 3 p. m. her temperature was 102.6. At 7:45 p. m. it was 102.4. She was a well nourished child, and presented an acute febrile picture, with definite fine ataxic tremor on motion. The knee jerks were absent. She was apprehensive and nervous. There was no weakness. Spinal puncture revealed the fluid hazy, under normal pressure. The cell count was 2,430. Fifteen c.c. of serum were given.

August 22: At 7 a. m. the child was slightly improved. She had a fair night with six hours' sleep. The bowels had not moved and no food had been taken since the last visit. There were stiffness and tenderness of the neck and spine, and a positive Kernig sign in each leg. No paralyses or weaknesses were made out. The temperature was 102.2. Twenty c.c. of cloudy fluid were withdrawn under normal pressure. Examination of this fluid at the bedside showed it to contain 2,220 cells and no red cells. The globulin reaction was very marked. Fehling's reaction was positive.

August 22: At 9:30 p. m. the patient rather suddenly assumed an opisthotonos position. The temperature was 103. The face was quite flushed, the breathing somewhat rapid. Fifteen c.c. of serum together with 1.5 c.c. of epinephrin chlorid were given intraspinally. No cell count was made.

August 24: The temperature was about 1 degree lower than on the previous day. Opisthotonos still continued, and paralysis of the right arm with weakness of the left, with cyanosis of the lips and face and evidence that the accessory respiratory muscles are involved. Spinal puncture was performed. Fifteen c.c. of serum together with 1.5 c.c. of epinephrin were given. The cell count was 250.

August 25: At 10 a. m. the patient's condition was very poor. The temperature was high, the pulse rapid, the patient's appearance cyanotic. Two c.c. of epinephrin chlorid were administered intraspinally. The child died at 11:30.

Comment.—There was overwhelming infection. Puncture and first treatment ten hours after the onset of meningeal symptoms revealed 2,430 cells.

It is interesting to note that after two months the mother remembered, what she had failed to mention at the time of the child's sickness, that the child had been feeling poorly on the previous day. Possibly this case, then, which has been reported in the group of sudden meningeal onsets, belongs to the group of straggling courses with a very short duration.

PATIENTS SEEN BY DR. ST. LAWRENCE

Case 41.—*History.*—K. McL., boy, aged 18 months, of Northport, L. I., Aug. 17, 1916, had slight diarrhea. His sister had the disease.

August 19: Child is in bed sleeping, with no history other than the slight diarrhea for two days. Constitutionally he seems well and was awakened for the purpose of examination and the taking of the temperature. Physical examination at 1 a. m. revealed the temperature 105; eyes, ears, nose, throat, heart, lungs and abdomen normal; neck and spine stiff and tender. The head would not flex on the chest. Suspension by the head and buttocks caused arching of the back and pain. Kernig's sign was positive in both legs. No paralyses were made out in any part of the body. The reflexes were normal. Spinal puncture revealed clear fluid under normal pressure with a moderate globulin test. The cell count was 320. This child was well on going to bed after playing all day. Fifteen c.c. of serum were given intraspinally after drainage of the cord.

August 20: At 2:30 p. m. the child seemed better and took food fairly well. The bowels were about the same as before. The temperature had dropped to 103. The child seemed less toxic.

Note.—On the 18th the temperature showed a critical drop to 99, where it remained for about eight hours. On the 20th the temperature was 98. The child felt better and showed no paralysis.

August 21: At 2:30 p. m. lumbar puncture was performed and the cell count found to be 540. Fifteen c.c. of serum were given intraspinally.

August 6: A report from the boy's father stated that the boy showed a normal temperature three days after he was seen and that he had made a perfect recovery with no paralysis.

Comment.—This case is interesting because of the unusual way in which the disease was recognized. The meningeal invasion must have occurred between the previous evening and 1 a. m., when 320 cells were found. This patient received two doses of serum, 30 c.c. in all. The first treatment was not later than seven hours after meningeal invasion.

Case 43.—*History.*—W. C., boy, aged 4 years, of Inwood, L. I., on the afternoon of Aug. 24, 1916, complained of not feeling well. He did not want to play. He had no pain. He did not vomit. The bowels moved only after medicine. The temperature was 101, the pulse 150. The pupils were unequal, and slow in reacting. The child was apathetic and hyperesthetic. The knee jerks were present, but slight. Kernig's sign was slight. The neck was stiff and painful. Lumbar puncture, at eight hours, revealed clear fluid under pressure. The cell count was 215.

August 25: The temperature was 101. The child was said to be about the same as before. The neck and back were stiff and tender with a considerable retraction of the former. There was no Kernig's sign or paralysis. The child appeared toxic and definitely of the meningeal type. Spinal puncture was performed; 15 c.c. of clear fluid were withdrawn. The cell count was 150. Fifteen c.c. of reddish serum from a cured patient received from Willard Parker were injected into the spine.

August 26: At 12:30 p. m. the temperature was 101. The child appeared to be more toxic and considerably worse than the day before. He had had two or three greenish, watery movements, which showed undigested grape and pear. He vomited once after serum injection; it was not projectile in type. Physical examination revealed the neck and back markedly retracted. Kernig's sign was marked. The lips and tongue were very dry and cracked. The child was very toxic. There was no paralysis. By spinal puncture, 15 c.c. of very cloudy fluid were obtained. There was no evidence of reddish color. The cell count was 5,600. Leukocytes were present. There were no red cells. The globulin test was + + +. The differential count revealed polymorphonuclears 81 per cent., lymphocytes 19 per cent. Film stained by Gram stain revealed no organism. Culture remained sterile at forty-eight hours. Fifteen c.c. of serum were injected intraspinally.

August 27: The temperature was 100. The child was much better. There were stiffness of the neck and retraction. Kernig's sign was present, but less marked. There was no paralysis. The bowels were in better condition. The appetite was good. The cord was tapped and drained. Fifteen c.c. of clear fluid were obtained. The globulin test was +. The cell count was 580. No serum was injected.

August 29: The child was improved. The temperature was 99. The neck was slightly stiff.

August 31: The neck was slightly tender, but otherwise normal. The temperature was 98. There was no paralysis.

September 8: The general condition of the patient was good. He was up in a wheeled chair. There was slight weakness of the legs. When walking there was a slight give at the knees. Knee jerks were present.

September 15: The interossei and lumbricales of the right hand were paralyzed and there was slight clawlike contracture.

Comment.—The initial puncture in this case was made about eight hours after the onset of symptoms, and revealed 215 cells. The child was very ill. At twenty-six hours a second puncture was done, showing 150 cells. Fifteen c.c. of serum were given. Note the increase of cells to 5,600 following this procedure, and also the marked opisthotonos. After the second injection the cell count dropped to 580. This patient, as many others, became much more acutely ill following the intraspinal injection.

II. Serum Treatment

Obviously no general conclusions can be drawn from a study of the tables and the foregoing serum treated cases. Each instance must be considered separately. But in the study of these cases several interesting points appear. In the first place, further excellent examples of the various types described in the first section are presented, and certain unusual events, notably the delayed paralysis (Cases 17 and 22), and the pressure symptoms after treatment (Cases 12, 29, 32, 42, 43 and 25 A). Whether or not the serum played a part in delaying the paralyses in those cases is still an open question. Of somewhat similar nature, perhaps, is the observation that in the treated group there are rather more instances of partial paralyses and transient weakness than in the untreated group. The matter of pressure effect following intraspinal injection is most important and should be specially emphasized. In a number of cases undesirable symptoms followed treatment and seemed to be the result of it. Two main types of disturbance appeared, one presenting the aggravation of symptoms of meningitis common to all therapeutic intraspinal injections and to which reference has already been made above (Cases 42 and 43 are examples). The other undesirable reaction is much more alarming, and consists of respiratory embarrassment with general collapse. The breathing becomes rapid and shallow, and often irregular (Cases 12, 25 A, 29, 32 and 36). In most instances these symptoms rapidly disappear following the release of spinal fluid by lumbar puncture; and it was later learned that they could be avoided by using small quantities of serum (from 5 to 10 c.c.) and slow injection after removal of a larger amount of spinal fluid. It is conceivable that death may be hastened in cases in which serum is given in too large doses and too rapidly, after involvement of the centers of the respiratory muscles has begun. That these occasional instances of the undesirable effects of intraspinal injection occur in the treatment of meningitis also is well known; but in that disease, as in poliomyelitis, they are the exception. By withholding immune serum from the individual suffering with poliomyelitis, the patient may be exposed to a greater and far more frequent danger than that contained in the rather rare chance of intracranial pressure disturbances.

An analysis of the treated cases shows that four cases in which weakness or paralysis was already present when the first serum treatment was given are reported in this series to show that in these instances at least there was no restraining effect on the advancing process (Cases 1, 10, 20 and 21).

Another group which seems not to have been influenced by the serum consists of those cases with low cell counts (from 50 to 150 per cubic millimeter) and an isolated facial palsy. This is a very definite type of case, is always mild, and the facial weakness almost always clears up whether treated or not.

The remainder of the series is composed of cases which represent as nearly as possible average examples of this multiform disease. There are numerous instances in which serum was given and paralysis occurred, and numerous instances in which paralysis did not occur. The only thing which differentiates many of the cases is the clinical impression at the time of treatment, and this cannot be transmitted adequately in words.

One thing seems to stand out fairly clearly—the need for early introduction of the serum. Working from the hypothesis that the serum operates by neutralizing the virus which is free in the spinal fluid, and so intercepting it on its way to the nerve tissue, we attempted to give the serum as soon after penetration of the meninges had occurred as possible. But there may be an additional therapeutic value brought about through the penetration of the serum directly into the nerve tissue, as discussed by Mott,[3] Flexner[4] and others. In the dromedary type of case the moment of meningeal involvement is often marked with amazing sharpness, and if a child has been under constant and careful observation during the first hump, and intermission, it has been possible in several instances to treat within a few hours of the onset of meningeal stage, or second hump.

In cases of the straggling type unfortunately the greatest difficulty is often found in recognizing from clinical signs the moment when the invasion of the meninges occurs. If the serum is regularly withheld until this event takes place there may well be loss of valuable time, for in this disease time is an important factor after penetration of the meninges has been completed. Consequently every effort should be focused on the detection of meningeal involvement at the earliest possible moment. In some instances the baffling phenomena of greatly increased cell count without clinical signs of meningitis demonstrates the difficulty of the problem (Cases 11, 14, 20, 21, and 24). Occasionally in the absence of the spine sign (painful anterior flexion of the spine) or negative Kernig, a marked onset of drowsiness seems to have been the signal of meningeal invasion. In a few instances loss of one ankle or knee jerk has been the only indication of disturbance of the central nervous system. But these may not mark the beginning. With this difficulty in view, the question arises whether the use of serum is not perhaps indicated before signs of central nervous system involvement appear. The occurrence of multiple cases in a family is so common that this indication becomes stronger for the treatment of a child developing fever in a family in which one member is already stricken.

When we consider these recorded facts and impressions regarding the use of immune serum, including a recognition of the dangers attendant on all subarachnoid injections, small though they be, the question arises of the degree and advisability of resorting to the serum at all. This question must ultimately be decided both on statistical grounds and on clinical impressions and observations. As regards the former, the series of cases here reported is inconclusive. As regards the second consideration it should be stated that all the men working in our special field last summer came to feel that the serum possessed definite and often striking power to prevent paralysis. But the impression was also gained that the serum was of benefit in those cases in which it was given within thirty hours from the time of appearance of signs of meningeal invasion. That the serum is of far less value after the advent of paralysis would appear to be the fact. Yet even that point is one not easily decided, and what the limit of its value may be can be determined only from a far larger series of cases.

In this connection our observations should also be compared and correlated with those of Netter,[5] whose views on the value of the serum are somewhat more positive than ours. He is definitely of the opinion that cases treated after paralysis has appeared clear up with a speed and completeness that would be impossible without the use of serum. In the final analysis of his latest series of thirty-two cases he concludes finally that there are six cured absolutely, etc.

But on reading the protocols of the cases one does not feel the justification of the conclusions. For example, Case XXX of his series presents the typical picture of profound stupor and a facial paralysis. So many examples of this rather common variety of the disease have been noted in the past few years, and have been recognized to have an unusually good prognosis, that it is somewhat difficult to credit the serum unequivocally in this particular instance.

Obviously Netter finds himself in much the same position as we do. The statistical proof rather fails, but the clinical impression that serum is of great value is a strong note in his contribution.

The notion we have formed from this small and inconclusive series is that once the meningeal invasion is established, that is, from twenty-four to thirty-six hours after the onset of clear meningeal signs, the chances of arresting the progress of the disease in the central nervous system are already seriously diminished. All this merely means that the serum, if it be employed, should be used early, which in turn means prompt diagnosis through careful watching and the lumbar puncture findings. The evolution of the disease is rapid and its course must be considered in terms of hours, not of days. Consequently any child who develops febrile symptoms without adequate and obvious cause, and then promptly recovers, or straggles along half sick, should be watched for the ensuing week with greatest care lest the sudden appearance of a meningeal invasion, insidiously striking while the child is at play, or sleeping, take the family and physician unawares and valuable time be lost. But so long as other, surer and hence better methods of treatment are not available, it is doubtful whether in individual instances we are justified in withholding the serum even at a later stage of the disease than here considered as most promising. The problem is one to be weighed pro and con in the individual case, and will doubtless to some extent be decided by circumstances and predilection, and whether or not serum is readily available.

Remembering that it is human serum we are forced to use at present, the supply must always be limited. There must be a choice, too, as regards source—the medical history of the donor and the length of time since he suffered an attack of poliomyelitis. While it is true that neutralizing bodies may still be detected several years after recovery from the acute disease, yet analogy would suggest the advisability of choosing persons more recently affected. Netter believes the most potent serum is found in individuals whose acute attack lies between three months and four years in the past. It is, of course, always possible that one specimen of serum is less active than another; hence pooling of the supplies should be practiced when collected, as they should be, in advance and in anticipation of the occurrence of cases of epidemic poliomyelitis.

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[3] Mott: The Olive Sharper Lectures, Lancet, London, 1910, 2, 79.

[4] Flexner, Simon: The Local Specific Therapy of Infections, THE JOURNAL A. M. A., Aug. 16, 1913, 447, The Local Specific Therapy of Infections, Nov. 22, 1913, p. 1872.

[5] Netter, A.: Bull. de l'Acad. de med., 1915, 74, 403

ABDOMINAL HEMORRHAGE OF OVARIAN ORIGIN

WITH REPORT OF A CASE DUE TO RUPTURE OF A SMALL FOLLICULAR CYST *

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The first thought of every surgeon who, on opening the abdomen of a woman, finds it full of blood, is that a ruptured extra-uterine gestation has been the source of the bleeding. In the great majority of cases, this surmise proves to be correct. Although the condition of "hematocele retro-uterina" had been described by Nélaton as far back as 1850, it was not until 1873 that Gallard emphasized the importance of ectopic gestation in the causation of such hemorrhages. Previous to that time, pelvic hematocele had been explained as due to such causes as rupture of varicose veins in the broad ligament, reflux of menstrual blood through the fimbriated extremities of the tubes, coitus during menstruation, etc.

At the present time gynecologists are still, and quite properly, inclined to look on the existence of free bleeding in the pelvis, whether or not it extends into *the abdominal cavity proper, as prima facie evidence of* an ectopic gestation. A recent case, however, has impressed me with the fact that grave abdominal hemorrhage is not by any means "pathognomonic" of *extra-uterine* pregnancy, and that its source is not necessarily the wall of a tubal gestation sac. In the case under discussion, the hemorrhage had its source in a ruptured follicular cyst of the right ovary. Before discussing the general subject, it may be well to detail briefly the history of this case.

REPORT OF CASE

A. M., a white girl, aged 15, single, whom I was called to see at 8 p. m., Oct. 9, 1916, through the kindness of Dr. Arthur L. Tumbleson, had been taken quite suddenly at noon on that day with violent pain in the *right* iliac fossa, nausea and some vomiting. There was no pain in the left side. When seen by Dr. Tumbleson at 7 p. m. there was definite rigidity of the right rectus, the pain was still localized in the right iliac fossa, and the patient was pale and prostrated. The temperature was 99 F. and the pulse 120. My own examination, made an hour later, confirmed that made by Dr. Tumbleson. We both felt that we were dealing with a case of acute appendicitis. As a matter of fact, the only discrepant symptom was the patient's marked pallor, suggesting the possibility of internal hemorrhage, due perhaps to ectopic pregnancy. No support for this idea could be obtained either from the patient's history or from physical examination. Menstruation had commenced at the age of 14, and had been somewhat irregular during the first year, but had recurred regularly every four weeks since then. The last period had occurred, September 30, ten days previously, and had been normal in amount and duration. There was no history of any subjective symptoms of early pregnancy. Rectal examination showed the uterus to be small and anteflexed. Nothing definite could be made out in the sides of the pelvis.

The patient was transferred to Mercy Hospital for operation. Blood examination, made just before operation, revealed a leukocytosis of 20,000, with 90 per cent. polymorphonuclears. Hemoglobin was estimated at 45 per cent. The pulse had risen to 138, temperature to 100.2 F., and shock was pronounced. There was no air hunger.

The abdomen was opened by a right rectus incision. As soon as the peritoneum was reached, the bluish shimmer through it told at once that we were dealing with an intraperitoneal hemorrhage, and we naturally thought at once of ectopic pregnancy. When the peritoneum was incised, a large quantity of liquid blood escaped. As all the patient's pain had been in the right iliac fossa, the right tube was quickly brought up into the incision. To our surprise it was normal. The left tube, on the other hand, was found to contain, at about its middle, a small dark bluish nodule measuring only about 1 cm. in diameter. This I assumed to be a tubal gestation, although its surface was absolutely smooth, without any point of rupture. Furthermore, the remainder of the tube, both proximal and distal to the nodule, appeared normal. The fimbriated end was free and there was no sign of bleeding from it, as in a tubal abortion.

Since the patient's symptoms had pointed so definitely to trouble on the right side, the right adnexa were again quickly examined, in spite of the patient's rather alarming condition. The tube, as stated, was normal in every way. The right ovary, while perfectly free from adhesions, showed on its surface a mound of somewhat ovoid form, measuring 2.5 cm. in length, and extending over most of the length of the ovary. It was evidently a simple follicular cyst. At its summit was an irregular opening, apparently a point of rupture, to which was adherent a dark blood clot. The opening and the cavity to which it led were stuffed with clots. The walls of the cyst were thin, and there was no macroscopic suggestion of lutein tissue. Owing to the condition of the patient, it was considered inadvisable to resect the cyst-bearing portion of the ovary. Two deep figure-of-8 sutures of chromic catgut controlled the entire cyst cavity. The left ovary and also, I may add, the appendix, were quite normal.

At the close of the operation, the patient was markedly shocked, so that the advisability of a transfusion was considered. Response to saline rectal infusions and stimulants was so prompt, however, that it was not resorted to. Recovery was uneventful.

COMMENT

A search of the literature indicates the great rarity of this form of abdominal hemorrhage. In a complete survey made by von Beust[1] in 1914, records are given of thirty-six cases which had been collected from the literature up to that time. Since then, only three other cases have been reported, by Lipscomb, Dansey and Browne.[2] My own case would thus seem to be the fortieth on record, although there can be little doubt that many others have either been unrecognized or else not reported. I may add that the foregoing figures do not include the cases of hemorrhage resulting from ruptured ovarian pregnancy, or that which accompanies the occasional rupture of large ovarian cysts.

The point of special interest in my case, aside from the ruptured follicular cyst on the right side, was the existence of the tiny unruptured tubal pregnancy on the left side. Although I felt sure, for the reasons noted above, that the hemorrhage could not have come from this tube, it seemed wise to invoke the aid of the microscope in the settlement of this point. In view of the well known interest of Prof. Franklin P. Mall in the subject of extra-uterine pregnancy, I submitted the specimen to him for study, with the request that he determine, if possible, whether the bleeding might by any chance have come from the tube. In his preliminary report he said:

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[1] Von Beust: Lebensbedrohliche intraperitonealle Blutungen aus geplatzten Follicülar—und Lutein—Cysten des Ovariums, Inaug. Diss. Zurich, 1914.

[2] Lipscomb, Dansey and Browne: Med. Jour. Australia, *1916*, *2*, *57*.

> We find that the enlargement in the middle third is due to a distention by a blood mass embedded in which is a chorionic sac, its villi extending out irregularly into the blood clot. Within the chorion is a partially contracted amnion separated from the chorion wall by a gelatinous magma. There is no trace left of the embryo. It is evidently rather a long standing ectopic pregnancy which did not stop the menstrual periods. It would be interesting to question the patient further as to whether or not in the past there was a delay of menses. The clinical history of a hemorrhage in this case is an interesting one, and it seems very likely that the hemorrhage occurred from the ruptured cyst in the ovary. The clot in the left tube seems to be an old one and there was no evidence of recent bleeding.

It seems to me, therefore, that the evidence is quite complete that the hemorrhage had its origin in the ruptured cyst and not in the pregnant tube.

The Coexistence of Tubal Pregnancy.—The association with a tubal pregnancy on the opposite side must be looked on as a rather remarkable coincidence. I have been able to find no explanation for such an association. While a number of cases have been recorded in which ovarian hemorrhage occurred in connection with intra-uterine pregnancy, the case here recorded appears to be the only one in which it was noted in connection with an unruptured ectopic pregnancy.

In one other case, however, that of Hedde,[3] there was, in addition to a ruptured corpus luteum cyst of the left ovary, also a ruptured tubal pregnancy on the right side. The latter was almost surely responsible, in large measure at least, for the large amount of blood found in the abdominal cavity. Hedde refers to a case reported[4] in 1848 under the caption of "Rupture of Tube and Ovary, Followed by Internal Hemorrhage and Exitus." In this patient death occurred twenty hours after the onset of pain, with symptoms of internal hemorrhage. Necropsy revealed, in addition to a ruptured right tubal pregnancy, that the left ovary was enlarged to the size of a small apple, its interior filled with blood, and its surface showed a rupture "one third a thumb breadth" in size.

Theoretically, it might be thought that pregnancy, either normal or ectopic, might exert a predisposing influence on account of the associated hyperemia. In my case, however, the tubal pregnancy was very small, and possibly, as Professor Mall suggested, old and retrogressive. Further questioning of the patient after operation, I may add, failed to throw any additional light on this possibility.

Causes of Hemorrhage from the Ovary.—The causes of abdominal hemorrhage emanating from the ovary — what might be called perforative ovarian hemorrhage — are in large measure similar to those of ovarian hemorrhage of the nonperforative type, in which the hemorrhage is confined in the ovary, giving rise to hematomas of various sizes. The causes and types of hematoma of the ovary I have discussed in another paper.[5] The principal predisposing factors, as might be expected, are conditions which bring about hyperemia of the ovary, with engorgement of its vessels. This hyperemia may be of either the active or the passive type. Practically always, as my study of hematomas has shown, the bleeding occurs from the thecal vessels of structures derived from graafian follicles. Frequently it comes from the walls of atretic follicles, but even more often from the walls of corpora lutea or corpus luteum cysts. The occurrence of free bleeding from the ovary into the abdominal cavity would thus depend largely on the location of the follicular structure involved. If it lies near the surface, it can easily be understood that the thin wall may be broken through by the blood which escapes from the engorged blood vessels in its walls, and free abdominal hemorrhage thereby results.

The Rôle of Trauma in the Causation of Ovarian Hemorrhage.—In nine cases, according to von Beust, trauma was thought to play a rôle in the causation of the hemorrhage. Neumann's patient is said to have died immediately after washing clothes. In Lockyer's case the rupture occurred during a dance, in Patruban's as the result of a misstep, and in those of Rosenberger and Jones it was the result of intrapartum compression of the ovary. Finally, mention may be made of the case reported by Marshall, in which severe abdominal hemorrhage followed rupture of a small ovarian cyst by bimanual examination. This accident is, I am convinced, a not uncommon one, although it is not always recognized. There are probably few gynecologists of large experience who have not had personal experiences of this sort. It is extremely easy to rupture a thin-walled cyst by bimanual examination, especially under anesthesia. I recall distinctly the rather startling sensation produced in a recent case by the collapse between my fingers of a small thin-walled cyst of the ovary during examination under ether preliminary to laparotomy. When the abdomen was opened, the small, flattened cyst, which had been about the size of a walnut, was readily seen. Fortunately it had caused only a small amount of bleeding, less than a tablespoonful of blood being found in the pelvis.

Source of Bleeding.—In the case herein reported the bleeding came from an atretic follicle, constituting what we clinically designate as a follicular cyst. This I feel justified in saying even without microscopic examination, which, unfortunately, was not possible. The thin walls, without a yellow layer, are reasonably good proof that it was not a corpus luteum structure, which can usually be easily recognized with the naked eye. Nor was there the slightest ground for suspecting the existence of that rara avis, an ovarian pregnancy.

Of twenty-three cases in the literature in which the source of the bleeding is mentioned, a corpus luteum or corpus luteum cyst is given in eighteen cases, and a follicular cyst or atretic follicle in five, including the one here reported.

Degree of Hemorrhage.—The amount of blood escaping into the abdominal cavity varies between rather wide limits. In some cases it is quite small, being confined altogether to the small pelvis. This, for example, was the condition in the cases of Jayle and Neumann. In that of Armin Müller, also, it is stated that only 2 tablespoonfuls of blood were lost. In much the larger number of cases, however, the amount of abdominal hemorrhage was very large, and, in quite a number, cataclysmic. This is true of the case I have herein reported. The patients of Bürger and Cohn each lost 2 liters of blood, Sudeck's patient 1.5 liters; in Puech's fatal case the patient lost 3 pints of blood, and Scanzoni's patient, who also died, is stated to have lost 6 pounds of blood. Other fatal cases are those reported by Trousseau and Valliset.[6]

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[3] Hedde: Ueber Ovarialblutungen, Inaug. Diss., Freiburg, 1913.
[4] Pollard: Lancet, London, 1848.
[5] Novak, Emil: Bull. Johns Hopkins Hosp., to be published.

Clinical Characteristics.—There is nothing characteristic in the symptomatology of ovarian hemorrhages, and hence they are rarely diagnosed until the abdomen is opened. In the milder cases one might expect that the occurrence of menstrual disorders would assist in the diagnosis. As a rule, however, menstruation does not seem to be much disturbed. Certainly there is nothing characteristic in the menstrual histories of the cases which have been reported. In both the mild cases and those of more acute type, it would be of great interest to determine whether or not the hemorrhage occurs by predilection at any one phase of the menstrual cycle, and especially whether or not it bears any relation to the period at which ovulation is believed by many to occur, that is, on about the tenth to the fourteenth day. Unfortunately, however, few of the authors who have reported cases make mention of the menstrual dates, and not a few give no menstrual history whatever.

In the acute or cataclysmic cases the onset is sudden. Pain is often violent and is located over the affected side, although it often spreads to other parts of the abdomen. Nausea and vomiting are common symptoms. In right sided hemorrhage, therefore, it is easy to understand why these cases have usually been diagnosed as acute appendicitis. Blood examination is likely to increase the deceptiveness of the picture, for moderate leukocytosis is the rule. If the internal hemorrhage is great, the characteristic anemia and perhaps air hunger may make one doubt the existence of a simple appendicitis. The pulse is accelerated to a degree depending on the amount of bleeding and the degree of accompanying shock. As in other forms of internal hemorrhage, the temperature may be subnormal, though this is not always the case. In at least eight of the reported cases, the diagnosis of acute appendicitis is stated to have been made.

Perhaps even more frequently, hemorrhage of ovarian origin is mistaken for extra-uterine pregnancy. Here again the sudden onset, with symptoms of grave internal hemorrhage, are the misleading elements in the picture. The diagnosis of ectopic gestation was made in nine of the reported cases.

These two examples will illustrate sufficiently the difficulty — one might almost say the impossibility — of diagnosing ovarian hemorrhage with any degree of precision. The possibility of its existence, however, should always be borne in mind in cases of supposed acute appendicitis in women, especially when there are also symptoms of internal hemorrhage. It is equally important, both before and after opening the abdomen, to know that frequently the clinical picture of ruptured ectopic pregnancy is closely mimicked by hemorrhage originating in the ovary.

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[6] In addition to the references already given, the following will be found of interest:
Stein: Ueber Hemorrhagien der Ovarien bei schwerer Anämie, Inaug. Diss., Halle, 1898.
Engstrom: Arch. f. Gynäk., 1907, **132**, 60.
Oehmen: Monatschr. f. Geburtsh. u. Gynäk., 1913, **38**, 283.
Tate: Am. Jour. Obst., 1905, **51**, 653.

Degrees of Feeblemindedness.—The condition of feeblemindedness varies from the most profound degree, in which there is but a glimmer of intelligence, to that in which the defect is apparent only in the highest levels of mental activity, and which is not incompatible with the ability to acquire a large store of information nor to earn a living.—Treadway, *Public Health Report,* Nov. 24, 1916.

USE OF THYMOL IN TREATMENT OF HOOKWORM DISEASE [*]

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During an intensive campaign for the detection and treatment of hookworm disease in Trinidad, British West Indies, under the direction of the surgeon-general of the colony, experiments were conducted for determining the efficacy of thymol when administered in capsule form with varying proportions of lactose and with sodium bicarbonate. The routine method employed in the treatment of the disease was to give each patient two treatments (the drug being administered in every instance by a trained assistant), one week apart, and then make a microscopic examination, using the centrifuge, six days after the second treatment, of a specimen of the bowel excretion to determine whether or not a cure had been effected. In making the experiments the drug was administered in each case by the same assistants, in the same manner and the same doses, and to patients living under the same conditions.

TABLE 1. — EFFECTIVENESS OF PURE THYMOL, AND THYMOL WITH VARYING PROPORTIONS OF LACTOSE

District	No. of Patients	Drugs	Patients Cured by Two Treatments No.	Per Cent.
1.	325	Pure thymol	41	12.6
2.	1,112	Thymol and lactose, equal parts	546	49.1
3.	350	Thymol and lactose, unequal parts	. 76	21.7

For the purposes of the first experiment, three districts were selected; the persons found by microscopic examination to have hookworm disease were treated in the first district with pure thymol and in the second and third districts with mixtures of thymol and lactose. Among the 325 patients treated with pure thymol, finely powdered, only forty-one, or 12.6 per cent., were cured by two treatments. In the second district, the 1,112 patients were treated with finely powdered thymol mixed with equal parts of lactose, and 546, or 49.1 per cent., were cured with two treatments. The 350 patients of the third district were treated with a supply of thymol already mixed with lactose and placed in capsules by the manufacturer. This thymol was not as finely powdered as that used in the first two districts, and the capsules were made up of the following proportions of the two drugs: 10 grains of thymol to 2½ grains of lactose; 5 grains of thymol to 5 grains of lactose (but not finely powdered), and 2½ grains of thymol to 1 grain of lactose. In this district only seventy-six of the 350 patients, or 21.7 per cent., were cured by two treatments. On recompounding the mixtures and adding lactose sufficient to make the proportion of the drug equal to that of the thymol, the number of cures following two treatments again rose to nearly 50 per cent.

These results, as shown in Table 1, demonstrate that thymol is much more effective in the treatment of hookworm disease when it is finely pulverized and mixed with at least an equal amount of lactose.

In the routine treatment of cases of hookworm disease with the mixture of equal parts of thymol and lactose, it was found that more than 30 per cent. of the patients suffered unpleasant gastric symptoms after the administration of the treatment. In the great majority of instances these after-effects consisted merely of a burning sensation and slight gastric pain, though in a few cases they were more severe and were accompanied by nausea and vomiting. These mild cases of gastric disturbance were found to be relieved by having the patients take a small amount (from 30 to 40 grains) of sodium bicarbonate dissolved in a glass of water. Sodium bicarbonate was first used in this manner in the treatment of thirty-two average cases, the soda being given at the time the thymol was administered. The result was that the number of instances of noticeable gastric disturbance after medication was greatly reduced, being present in only four, or about 12 per cent., of the cases; and on reexamination after two treatments it was found that seventeen, or 53.1 per cent., of the patients were cured. This would seem to indicate that the sodium bicarbonate, in addition to preventing the gastric disturbances caused by the thymol, also makes the thymol more effective, since the average number of cures after two treatments with the mixture of thymol and lactose, in more than 5,000 cases, was about 48 per cent.

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[*] The experiments described in this paper were made during a campaign conducted by the International Health Board of the Rockefeller Foundation and the Government of Trinidad.

An equal part of sodium bicarbonate was then mixed with thymol and used in treating the patients in the first of two districts, while the usual mixture of lactose and thymol was employed in the second district. In the first district of 136 patients, sixty-nine, or 51 per cent., were cured by two treatments, and 113, or 83 per cent., by four treatments; while in the second district of 154 patients, sixty-six, or 43 per cent., were cured by two treatments, and 119, or 76 per cent., by four treatments. This shows a greater effectiveness on the part of the sodium bicarbonate mixture of 8 per cent. at the end of two treatments and of 7 per cent. at the end of four treatments.

TABLE 2.—EFFECTIVENESS OF THYMOL-SODA AND THYMOL-LACTOSE

	Drugs			
	1. Thymol-Soda		2. Thymol-Lactose	
Persons cured by:	No.	%	No.	%
Two treatments	69	51	66	43
Four treatments	44	83	51	76
Six treatments	17	96	31	96
Seven treatments	6	100	6	100
Total	136		154	

In the first district, in which the thymol and sodium bicarbonate were used, the population was composed almost entirely of East Indian coolies and the percentage of infection was high, being 95.2 per cent. of the entire population. In the second district the percentage of infection was lower, being 82.5 per cent., while the population was made up of about equal numbers of negroes and East Indians. The degree of infection is usually more severe and the individual cases more difficult to cure in districts having high percentages of infection, the large proportion of infected persons and the absence of sanitary conditions in such districts always tending to produce a constant source of infection. Then, again, in districts composed of East Indians, because of their insanitary mode of living, there are always large numbers of heavily infected cases.

Table 2 gives in detail the results obtained in the two districts.

The experiments have hardly been extensive enough to justify a definite conclusion as to the relative merits of the sodium bicarbonate and the lactose mixtures, but so far as thymol mixtures are concerned, the experiments show the superiority of thymol and sodium bicarbonate in treating hookworm disease. Sodium bicarbonate is much less expensive than lactose, and its use means quite a saving in large intensive campaigns, such as are being conducted in many of the tropical countries.

AN EPIDEMIC RESULTING FROM THE CONTAMINATION OF ICE CREAM BY A TYPHOID CARRIER

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Twenty-nine persons attended a country school picnic at Helm, Calif., May 13, 1916. That evening, many of those in attendance were taken with nausea, vomiting and diarrhea, suggestive of an acute intestinal intoxication or infection. These symptoms were of about two days' duration; with two exceptions, however, all of those thus affected developed typhoid fever in about eight days. As acute intestinal disturbances often precede an epidemic of water-borne typhoid, it will be noted that this food-borne epidemic was similarly preceded by antetyphoidal acute intestinal symptoms.

The sick were members of ranchers' families living miles from the nearest physician. Every home in the small farming community had one or more inmates desperately ill with typhoid, and practically every rancher loaded his sick on farm wagons and carried the family to the nearest town. On the outskirts the families camped in a field, tents were erected, and the local medical men and nurses established an outdoor hospital for the sick, who were arriving daily from the deserted ranches. Twenty-three persons came down with the disease, and three of these died, a mortality of 13 per cent. One died as a result of intestinal perforation, and the remaining two from extreme intoxication. The blood of twenty patients was tested, and all gave positive Widal reactions.

At the request of the local health officers, the California State Board of Health, through the Bureau of Communicable Diseases, made an investigation to determine the source of the epidemic.

It was found that the school picnic was the only function attended by all those who were ill, and that the time elapsing between that event and the onset of the disease ranged from five to twelve days, giving an average incubation period of eight days.

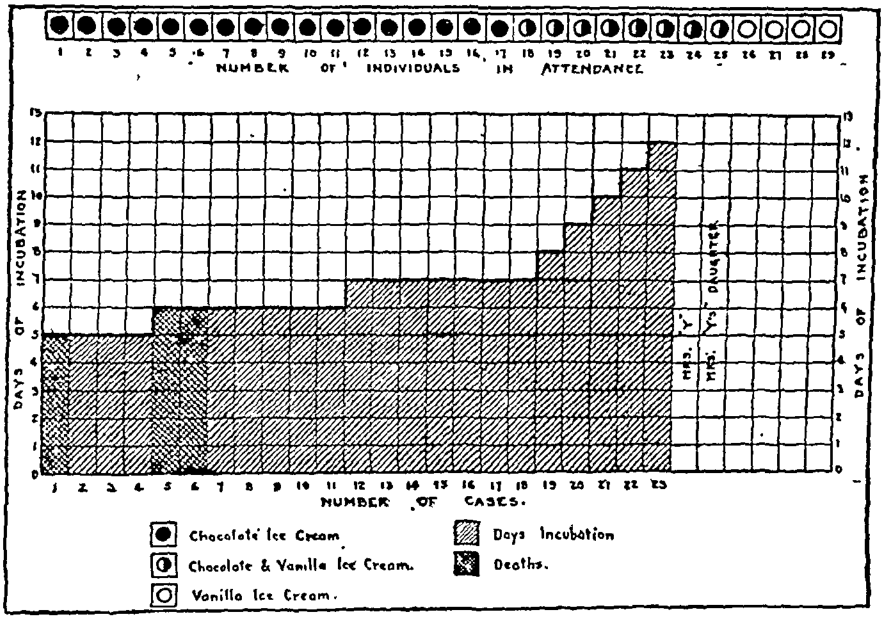
The articles of food served were pickles, sandwiches of chicken and minced ham, homemade sausage, potato salad, mayonnaise dressing, muffins, cake and ice cream.

In tracing the source of the infection it was found that only one of these articles of food had been partaken of by all in attendance: the ice cream. Of this there had been two kinds, vanilla and chocolate. Chocolate had proved the more popular; four late comers found only three portions of this ice cream, and the fourth member had vanilla only. This boy did not become ill at all; on the other hand, every one who had eaten of the chocolate ice cream — even those eating nothing else — developed first the intestinal intoxication and subsequently typhoid fever. In fact, one unfortunate who ate four dishes was seriously ill from the onset, and the case terminated fatally. There were two exceptions: although Mrs. Y., the maker of the chocolate ice cream, and her daughter ate the ice cream and suffered from the nausea, vomiting and diarrhea, they did not develop typhoid fever.

It became evident that the chocolate ice cream was the source of the infection, as:

1. Those not partaking of it did not become ill.
2. Those partaking of it, but of no other food, were taken ill.
3. Those eating chocolate ice cream were taken with acute intestinal symptoms indicating that the conditions under which it had been produced were favorable to bacterial multiplication.
4. Those eating the largest amount of chocolate ice cream were the most seriously ill, both with acute symptoms of intestinal intoxication and with typhoid fever, while those who ate but sparingly were only slightly ill.

From the accompanying chart it will be noted that twenty-nine persons attended the picnic; seventeen ate chocolate ice cream and eight had chocolate and vanilla, making a total of twenty-five who partook of the chocolate ice cream. Twenty-three of these developed typhoid fever, only Mrs. Y. and her daughter escaping infection. It will be noted that the majority of the incubation periods were of short duration, the average being eight days, and that the three fatal cases were of five and six day incubations.



Number in attendance, number of cases, incubation period and fatalities.

As the chart indicates, six ate a mixture of the chocolate and vanilla, and the same number show the longest incubation periods; on the other hand, eighteen ate chocolate only, and eighteen had comparatively short incubation periods, suggesting that the larger the portion of chocolate ice cream eaten the greater the infection, resulting in a shorter incubation.

Mrs. Y. prepared the chocolate ice cream. The cream was not obtained by mechanical separation and used immediately, but by skimming the milk of the preceding day. Ground chocolate was stirred into a mixture of milk, eggs and sugar. This combination, after being heated, then cooled, and added to the cream which had been whipped, was left in the freezer—without being iced—from 6:30 in the morning until 1 o'clock, when it was frozen. The method used in preparing this ice cream offered opportunity for contamination, and in addition the temperature was favorable for bacterial multiplication.

IDENTIFICATION OF THE CARRIER BY LABORATORY EXAMINATION

Specimens of stool were secured from all the members of Mrs. Y.'s family as well as all those in the family of Mrs. L., who made the vanilla ice cream. Of all the stools examined, the typhoid bacillus was isolated from but one specimen—that of Mrs. Y. Morphologically, culturally and serologically, this isolated strain was typical of the typhoid organism.

On questioning, the following typhoid history was elicited: Mrs. Y. had had typhoid fever seventeen years ago while living in Kansas. Of her immediate family, the son had typhoid fever, and the daughter, in whom there is no history of typhoid, was given antityphoid vaccine two years ago. During the last five years, six district school teachers had boarded at the home of Mrs. Y., who cooked for the household; while living here four of these teachers developed typhoid.

The blood of Mrs. Y. gave only a fair Widal reaction. In a dilution of 1:50 after an exposure of one hour, although there was clumping, there were numerous free organisms which were motile. As explanatory of this inconclusive Widal reaction it may be pointed out that this biologic phenomenon is brought about by a parenteral digestion of typhoid bacilli. As in typhoid carriers, the organisms grow practically outside the body, it is obvious that the Widal reaction would not be more evident in typhoid carriers, after a lapse of years, than in those who became free from the organism after recovery. It follows, therefore, that the reaction is not a reliable determining factor in the identification of typhoid carriers; in fact, even as an auxiliary means of identification, the Widal reaction seems of questionable value, as is also the absence of a typhoid history. The consideration of the Widal findings and the absence in two cases of a typhoid history in three California typhoid carriers support these views.

Mrs. Y. had typhoid seventeen years ago; her Widal was fair.

Mrs. X.,[1] in whom there is no history of typhoid, gave a negative reaction; on the other hand, Mrs. V.,[2] in whom there is no history of typhoid, gave a high power agglutinating serum.

Since the typhoid bacillus was isolated from the stool of Mrs. Y., six specimens of her stool have been examined at intervals of from three to six weeks. Typhoid organisms have been isolated from all specimens. Several of these have yielded on litmus-lactose-agar plates as high as 30 per cent. typhoid colonies, each subsequently being identified as typhoid both culturally and serologically.

Such specimens of stool are sent to the laboratory in a solution of 20 per cent. glycerin in physiologic sodium chlorid solution. An amount of stool not

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1. Sawyer, W. A.: Ninety-Three Persons Infected by a Typhoid Carrier at a Public Dinner, The Journal A. M. A., Oct. 31, 1914, p. 1537.
2. Cumming, J. G.: Typhoid Epidemic at Maricopa and Taft, Month. Bull., California State Board of Health, September, 1916, p. 148.

larger than a split pea is added to a 25 c.c. container of the glycerin solution. The contents should then be thoroughly shaken so as to make a homogeneous suspension. If a large amount of the stool is added the glycerin does not accomplish the purpose for which it is used — that of inhibiting the overgrowth of colon bacilli.

In this laboratory the routine procedure for the identification of suspected typhoid specimens is: (1) to plate the specimens on litmus-lactose-agar; (2) to transfer all suspicious typhoid colonies to Russell's double sugar medium; (3) to transplant from all Russell tubes which give the characteristic surface growth and color changes to the various sugar broths, and (4) if the sugar reactions are characteristic for typhoid, to determine the final identification of the organism by the microscopic agglutination.

The California State Board of Health desires to keep in touch with all typhoid carriers, not only for the purpose of directing their daily pursuits along lines which will not endanger the public health, but also for the purpose of making investigations of the carrier problem. An agreement to the following effect, therefore, is entered into with all identified carriers resident in the state:

> I have this day been informed that my excreta contain typhoid bacilli and that, unless unusual precautions are taken, persons will contract the infection from me. Realizing this danger I agree to observe the precautions stated below, and request that I be permitted to remain in free communication with other persons.
>
> 1. I will take no part in the preparation or handling of food which will be consumed by persons outside of my immediate family, and I will not participate in the management of a boarding house, restaurant, food store, or in any other occupation involving the preparation or handling of food.
> 2. I will not dispose of my excretions in a toilet to which flies have access without first exposing such excretions for thirty minutes to either a 5 per cent. dilution of liquor formaldehydi or 5 per cent. phenol (carbolic acid).
> 3. I will notify the local health officer of any cases of typhoid among the persons with whom I come in contact.
> 4. I will inform the local health officer of any contemplated change of residence so that he can notify the state board of health and obtain its approval.
> 5. I will submit specimens for examination when requested by the state board of health.
> 6. I will fill out the following report blank when submitted to me semiannually, and return the same to the California State Board of Health:
>
> "I have, during the last six months, complied to the best of my knowledge with the five separate agreements entered into between myself and the California State Board of Health. Precautions involved in these separate agreements are for the purpose of preventing typhoid infection."

The typhoid history of Mrs. Y. demonstrates the inefficacy, from the standpoint of community health, of treating a case of typhoid without seeking the source of the infection. It is seventeen years since she herself had typhoid; there are many isolated cases of the disease reported among those with whom she came in contact; finally, this epidemic, traced indubitably to her, occurred. Had the first case, years ago, for which she may have been responsible, been traced to its source, the subsequent cases, the economic loss to the community, and the three deaths could have been avoided.

Heredity.—The qualities and achievements of nations are due less to governments than to grandmothers.—E. G. Conklin, *Yale Review.*

THE ISOLATION OF THE BACILLUS TYPHI-EXANTHEMATICI FROM THE BODY LOUSE*

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The rôle played by the body louse in the transmission of typhus fever was first demonstrated by Nicolle and his co-workers[1] in 1909, and independently and at about the same time by the American investigators, Anderson and Goldberger,[2] and Ricketts and Wilder.[3] Since then this has been thoroughly confirmed and definitely established. Although other insects have been investigated and have been proved free of the virus, it is still impossible to say at present whether or not the louse is the only carrier of the infection.

Working on this basis, a number of observers have reported what they regarded as the infectious element found in the louse. Ricketts and Wilder,[4] in 1910, stated that "polar staining organisms have been found occasionally in the feces and intestinal contents of 'normal lice,' whereas they are present almost constantly, and often in large numbers, in similar material from 'infected' lice." They describe the organism as a "short bacillus — hardly two micromillimeters in length [estimated] and their diameter at about one-third this figure. With Giemsa's stain polar bodies may be seen." Their morphology is "roughly of those which belong to the hemorrhagic septicemia group."

Later, in 1913, Hegler and von Prowazek[5] also found in a typhus-infected louse, in smear preparations stained by Giemsa's method, small structures of coccoid nature (also in "diploform"). No other details are given, but it is logical to assume that these observers saw the identical organisms first described by Ricketts and Wilder.

In 1914, Sergent, Foley and Vialatte[6] reported that in thousands of lice fed on healthy persons or non-typhus patients no organisms were found. But in typhus-infected lice, they noted small bacilli, from 1.2 to 2.5 microns in length and from 0.5 to 0.8 micron in breadth and whose ends stained more intensely (Giemsa's stain). They were coccoid in form, often paired, and sometimes in chains. They were more numerous in the bloody fluid of the digestive tract than in smears made from crushing the organs of the insect. In the early stages of typhus fever, the bacilli were less numerous but progressively increased in numbers with the course of the disease. The observation of these workers becomes of still greater importance when the fact is taken into consideration that they were able to produce typhus fever in monkeys by the injection of what they regarded as typhus-infected lice.

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* From the Pathological Laboratory, Mount Sinai Hospital.

* Work done under the tenure of a George Blumenthal, Jr., fellowship in pathology.

* During the course of the work, one of the authors (Dr. Carlos E. Husk) became infected with typhus fever and died.

[1] Nicolle, Comte and Conseil: Compt. rend. Acad. d. sc., 1909, **149**, 486.

[2] Anderson and Goldberger: Collected Studies on Typhus, Bull. 86, Hyg. Lab., U. S. P. H. S., 1912.

[3] Ricketts, H. T., and Wilder, R. M.: The Typhus Fever of Mexico (Tarbadillo), The Journal A. M. A., Feb. 5, 1910, p. 463; The Etiology of the Typhus Fever (Tarbadillo) of Mexico City, April 23, 1910, p. 1373.

[4] Ricketts and Wilder: (Footnote 3, second reference).

[5] Hegler and von Prowazek: Berl. klin. Wchnschr., 1913, **50**, 2035.

[6] Sergent, Foley and Vialatte: Compt. rend. Soc. de biol., 1914, **77**, 101.

Series 4 comprised six lice removed from a patient in the twelfth day of his illness. Three of these lice showed positive cultures: Louse 1 showed one colony of typhus bacilli after three days' incubation; Louse 2 showed eight colonies after similar incubation, and Louse 3 showed four colonies after nine days' incubation. The organisms in the case of Louse 1 were gram-positive; those of Louse 2 and Louse 3 gram-negative, most of the bacilli becoming gram-positive in the first and second subculture, respectively.

Series 5 comprised five lice taken from a patient at a period corresponding to one day before the crisis. At the same time a guinea-pig was injected with lice from the same patient. The guinea-pig showed evidences of having been infected with typhus fever; the culture showed growths of the typhus bacillus after four days' incubation. These organisms were gram-negative in the original colony.

Series 6 comprised four lice taken from a patient four days after the crisis. After six days' incubation, the culture showed one colony containing gram-negative organisms, another colony containing partly gram-positive organisms. After two subcultures these were definitely gram-positive.

Cultures from four of these series were studied in New York and were proved identical with endemic and epidemic strains of the typhus bacillus.

Thus six series of lice from five different patients were cultivated. The number of lice in each series varied from two to six. The period of the disease when the lice were removed varied from the twelfth day of illness to the fourth day after the crisis. From practically all these lice, the *Bacillus typhi-exanthematici* was isolated, sometimes in pure culture, in numbers varying from two colonies to an innumerable number of colonies. In all the experiments made, these lice were proved infectious.

In an additional series of lice removed from a person with a very mild case of endemic (New York) typhus fever, the culture was negative. The lice at the same time were injected into a guinea-pig without producing a reaction.

A loopful of the organisms from an original colony in one of the louse cultures was emulsified in physiologic sodium chlorid solution and injected intraperitoneally into a guinea-pig. Twenty-four hours later there was a considerable drop in temperature and on the third day the animal died. On necropsy, the typical lesions which are incident to typhus fever in this animal, namely, the enlarged spleen with its malpighian bodies prominent, and all the other viscera apparently normal, were found. The spleen of this guinea-pig was removed for culture. After four days' incubation, five typical colonies of the typhus bacillus appeared.

To summarize this phase of the work, we may state that we have been able to isolate the typhus bacillus from typhus-infected lice, and that in its earliest stage of growth such organisms are pathogenic for guinea-pigs.

THE VARIABILITY OF THE BACILLUS TYPHI-EXANTHEMATICI TO GRAM'S STAIN

It will be noted from the forgoing series of cultures of typhus-infected lice that these organisms are usually gram-negative in the original colonies but that on subculture they become definitely gram-positive. Pure gram-negative forms may persist from the original colony through two subcultures.[17] Independently da Rocha-Lima, as well as Plotz in the Balkans and Baehr in Russia, have observed in typhus-infected lice these organisms decolorized by Gram's method.

In the routine examination of blood cultures taken on typhus patients, one is also impressed by the constancy with which one meets gram-negative organisms in the original colonies. Sometimes they may contain uniformly gram-negative, but more often they consist of partly gram-negative and partly gram-positive, organisms. In the blood culture studies recently made by Baehr and Plotz[11] in the Balkans and Russia, the occurrence in the original colonies of gram-negative forms was frequently noted. Our experience agreed with theirs, namely, we have noted that these gram-negative forms become gram-positive on subculture.

In comparing this variability to the Gram stain to that described in other organisms, we find that the literature offers several analogies.

It has been pointed out that the typhus bacillus in growing on glucose serum medium precipitates by the production of acids some constituents in the serum, the result of which is a clouding of the medium (the precipitation phenomenon of Libman[18]). A glucose serum agar medium is employed both in the original cultures and in the subcultures. Winslow[19] has found in regard to the *Coccaceae* that "there was a suggestive correlation between acid production and reaction to the Gram stain, the most actively fermenting forms being usually gram-positive."

The effect of the medium (or the environment of bacteria) on its reaction to Gram's stain is further noted in the case of the *Bacillus pyocyaneus*, which is gram-positive in the very youngest generation. Also Cedercrentz[20] noted that gram-negative bacilli after suspension in albumin became gram-positive. In regard to the poliomyelitis organism of Flexner and Noguchi, early cultures show pink forms, while in later cultures (especially if peptone is used in the medium), the "peptone and possibly other constituents of the bouillon render the micro-organisms somewhat larger as well as enable them to retain more firmly the Gram stain."[21]

These theoretical considerations are offered as suggestions for further investigations. However, one factor should be noted: the relationship between decolorization by Gram's method and the virulence of the organism. In the very early stages of growth the organism is often virulent—at these stages it is often gram-negative.

CONCLUSIONS

Since 1910, many observers in different parts of the world have reported the finding of an organism in typhus-infected lice. This organism they believe to have a causal relationship to typhus fever. Owing to the fact that improper methods have been used, culture of this organism was impossible. In Mexico, we have been able to grow this bacterium and to show that morphologically, culturally and serologically it is identical with the *Bacillus typhi-exanthematici.*

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[17] The gram-negative forms may be seen as well in an occasional very old culture, but in these instances the decolorization is due to degeneration forms.

[18] Libman:, Zentralbl. f. Bakteriol., 1900, Part I, **28**, 293; Jour. Med. Research, 1901, **6**, 84.

[19] Winslow and Winslow: The Systematic Relationships of the Coccaceae, New York, 1908, p. 95.

[20] Cedercrentz: Arch. f. Dermat. u. Syph., 1908, **93**, 355.

[21] Flexner and Noguchi: Jour. Exper. Med., 1913, **18**, 461.

Cost of Eye Injuries.—According to the findings made by the field secretary of the National Committee for the Prevention of Blindness after a survey of Minnesota, eye injuries cost the employers of the state nearly $50,000 a year and this does not include medical expenses or economic loss. The stone quarries of the state, especially those of St. Cloud, are criticized because of the failure of the managers to supply men with goggles or other protecting devices.

KÉRATODERMIE BLENNORRHAGIQUE

WITH A REPORT OF TWO CASES

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The first American case of this interesting disorder was reported by Simpson[1] in 1912. Since that time only two additional cases have been recorded in this country — one by Roark,[2] and the other by Haase.[3] In marked contrast to the seeming rarity of kératodermie blennorrhagique in America, several new cases have been reported in other parts of the world during the past five years. Among those who have described recent cases of this disease are Gougerot and Meaux Saint-Marc,[4] Swift,[5] Hodara,[6] Brault,[7] Haslund,[8] Jensen,[9] Selenew,[10] Sobotka,[11] Williams,[12] Lange,[13] Gibbs,[14] and Buschke and Michael.[15] Additional cases reported before 1912 should be credited to Rost,[16] Arning and Meyer Delius,[17] and Robin and Fiessinger.[18]

We shall limit ourselves to a discussion of kératodermie blennorrhagique, and not attempt to include the erythematous, urticarial, purpuric and other skin manifestations occurring in gonorrhea.

Buschke[10] states that he saw a typical instance of kératodermie blennorrhagique which occurred independently of a gonorrheal infection. His patient gave a history of gonorrhea seven years previously. There was some swelling of the right knee, owing to an increased amount of fluid. The skin over the knee was reddened and hot to the touch. Swelling and redness were present about the left internal malleolus. The left shoulder was the seat of pain on motion. A soft infiltrate was found in the urethra 14 cm. from the meatus urinarius. The prostate was enlarged and somewhat painful. The skin eruption was typical of kératodermie blennorrhagique, there being a profusion of large rupioid lesions as well as smaller horny papules on the scalp, back and limbs. In our opinion both the skin lesions and the arthritis in this case were probably due to an old gonorrheal focus, possibly in the prostate, as we do not believe that the disease occurs independently of such a focus in some part of the body.

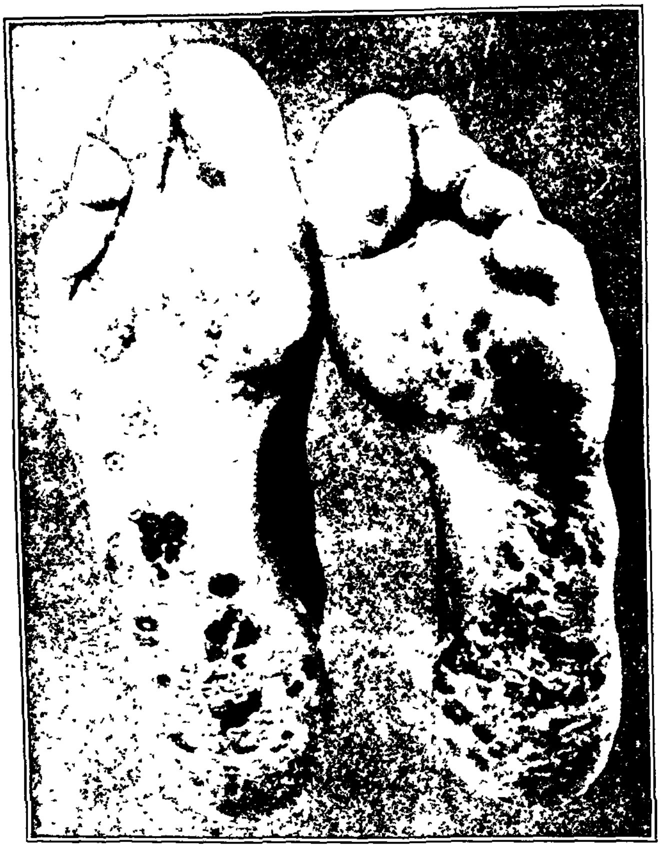

Fig 1.—Lesions in Case 1.

The patient seen by Robin and Fiessinger[18] is of unusual interest in that he presented characteristic lesions on the hands, with but very slight involvement of the feet.

Gougerot and Meaux Saint-Marc's[4] patient was treated internally with hexamethylenamin in 0.75 gm. doses. Within fifteen days the eruption had almost entirely cleared up with this treatment alone.

Sobotka[11] has given a painstaking description of the lesions observed in his case, which was remarkable not only for the extensive joint involvement, but also for the generalized cutaneous manifestations. Only the upper arms, right forearm and the breasts were free from skin lesions.

REPORT OF CASES

Case 1.—*History.*—A man, aged 25, American, clerk, entered Cook County Hospital, Oct. 1, 1913, complaining of painful urination and a urethral discharge of three days' duration, as well as stiffness of the phalangeal joints of both hands, the result of previous arthritis. He had suffered from four previous attacks of gonorrhea, the first one in 1906 lasting eight months. The second gonorrhea began in November, 1908, and continued for ten months. Gonorrheal arthritis, affecting both feet, set in three weeks after the onset of that attack and persisted for about eight months. The third gonorrheal urethritis appeared in 1911, and although of brief duration, was accompanied by "rheumatism," involving the lower legs and feet. In 1912 the patient had a fourth attack of gonorrhea. Seven days after its onset, gonorrheal arthritis appeared. It began in the hands and gradually spread until almost all of the joints were involved, lasting altogether about four months. Ten days after the onset of the arthritis, numerous pea-sized horny growths appeared on the soles and backs of both feet. At about this time a marked bilateral conjunctivitis developed. During his "rheumatic" attack the patient was in Bellevue Hospital, New York, but later went to Hot Springs, Ark., where he finally recovered.

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[1] Simpson, F. E.: Kératodermie Blennorrhagique, The Journal A. M. A., Aug. 24, 1912, pp. 607-612.

[2] Roark: Blennorrhagic Keratosis, The Journal A. M. A, Dec. 7, 1912, pp. 2039-2040.

[3] Haase: Keratosis Blennorrhagica, Jour. Cutan. Dis., 1916, **34**, 819-825.

[4] Gougerot and Meaux Saint-Marc: Keratose blennorrhagique disséminée, guérison, Ann. d. mal. vén., 1912, **7**, No. 11.

[5] Swift: Case of Keratodermia Blennorrhagica, Australasian Med. Gaz., Nov. 30, 1912.

[6] Hodara: Ein Fall von Gono-Kokamie und generalisiertem gonorrhoischem Exanthem,' Dermat. Wchnschr., 1912, **55**, 397-401.

[7] Brault: Keratose blennorrhagique chez un indigène, Bull. Soc. franç. de dermat. et de syph., Feb. 6, 1913, p 146.

[8] Haslund: Et tilfaelde af generalisieret Gonokokinfektion med Keratoser, Ugesk. f. Læger, 1913, **75**, 325-330.

[9] Jensen: Kutane Manifestationer ved Gonorre, Hospitalstidende, 1913, **6**, 534.

[10] Selenew: Muskelatrophie, Muskel-rheumatismus, Arthritis, Keratosis der Fusssohlen bei einem gonorrhoischen patienten, Ztschr. f. Urol., 1913, **7**, 477-481.

[11] Sobotka: Pustulos hyperkeratotisches Exanthem bei gonorrhoischer Allgemeinerkrankung, Dermat. Wchnschr., 1913, **56**, 181.

[12] Williams: Keratodermia Blennorrhagica, Brit. Med. Jour., 1914, **2**, 627-629.

[13] Lange: Ein Fall von Hyperkeratosis gonorrhoica, Deutsch. med. Wchnschr., 1914, **40**, 495.

[14] Gibbs: A Case of Keratodermia Blennorrhagica, Brit. Jour. Dermat., 1914, **26**, 433.

[15] Buschke and Michael: Zur Kenntnis der Hyperkeratotischvesikulosen Exanthem bei Gonorrhoe, Arch. f. Dermat. u. Syph., 1914, **120**, 348-375.

[16] Rost: Seltene Komplikationen der Gonorrhoe, hyperkeratotische Exantheme und universelle ankylosierende Arthritis, Dermat. Ztschr., 1911, **18**, 3.

[17] Arning and Meyer Delius: Beitrag zur Klinik der gonorrhoischen Hyperkeratosen, Arch. f. Dermat. u. Syph., 1911, **108**, 56-72.

[18] Robin and Fiessinger: Keratose blenorrhagique des mains, Bull. Soc. méd. d. hôp. de Paris, Feb. 17, 1911, p. 141.

[19] Buschke: Ueber universell symmetrische entzündliche Hyperkeratosen auf uro septischer und arthritischer Basis, Arch. f. Dermat. u. Syph, 1912, **113**, 223 239.

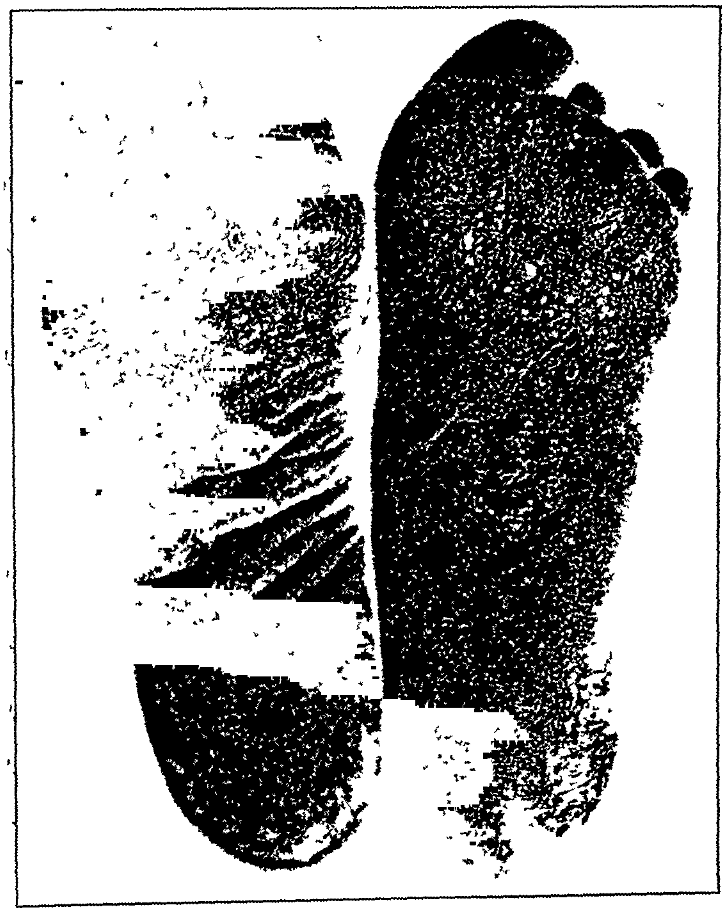

Fig. 2.—Lesions in Case 2.

The attack of gonorrhea for which he came under our care was his fifth. Examination of the patient showed him to be normal, save for a urethral discharge containing gonococci, slight flexion of the fingers of both hands, due to a former joint trouble, and a tendency to "chilblain" circulation. The three glass urine test showed the first two glasses to be cloudy.

Nine days after the admission of the patient to the Cook County Hospital, "rheumatism" appeared in both feet. Eight days later numerous pea-sized keratotic lesions appeared on the soles, the lower third of both legs, the backs of hands, the glans penis and the corona glandis.

The lesions were symmetrically distributed over the palms and backs of both hands, glans penis, anterior surfaces of lower third of both legs and on the soles. Two principal types were to be seen, and since they were most characteristic as found on the soles, we shall content ourselves with a description of the cutaneous manifestations as observed in those regions.

On the anterior portions of each sole were a few more or less discrete horny papules, in addition to a number of similar lesions which had fused to form small plaques. The individual papules averaged about 5 mm. in diameter. They were reddish brown, and each was surmounted by a closely adherent horny crust. A narrow reddish collar-like zone surrounded each lesion. When the horny cap was removed, the underlying surface was found to be pinkish and the site of a slight amount of infiltration. These lesions were much flatter than those on the rest of the body, rising only about 1 mm. above the surrounding skin. The flexor surfaces and lateral aspects of the toes were also affected by lesions of the cornlike variety. These were most numerous on the inner surfaces of the left great toe. The toe nails were thickened, especially those of the right fourth and left third toes.

The posterior portions of each sole were covered by lesions which differed markedly from those already observed. Most of them corresponded to the rupial type. They were larger and lacked the central elevation which was present in the horny papules. Their crusts were of the oyster-shell type, and darker than those of the other lesions. These rupioid lesions were so closely aggregated as to form a veritable horny plate, especially marked on the left sole, beginning near the inward curve of the plantar arch and being particularly accentuated over the heel. Some of these lesions attained a diameter of from 1 to 1.5 cm. Most of them were elevated peripherally, some even 0.5 cm., forming a sort of wall surrounding a central depression. The ensemble gave one the impression of a relief map on which a miniature mountain range had been depicted. Scattered among these larger lesions were a few of the cornlike papules to which we have already referred.

In addition, over the ball of the left foot were half a dozen dark reddish, circular, scaling macules, evidently the remains of former lesions.

Four days after admission to the hospital a severe bilateral conjunctivitis appeared. No pus was present, nor was the gonococcus found. Within one week the conjunctivae had again become normal.

Treatment.—The patient was treated with gonococcus vaccine, 50 million hypodermically every third day, under which his "rheumatism" improved. In addition to the vaccine treatment, the patient's gonorrhea was treated with injections of protargol, 0.5 per cent. three times daily, and later with potassium permanganate irrigations daily. Hexamethylenamin, 5 grains three times a day, and afterward potassium citrate, 15 grains thrice daily, were given. Oil of santal, 5 minims, was also given after meals, but soon discontinued because of nausea. "Calamine lotion" was applied to the feet daily. The conjunctivitis was treated with 20 per cent. argyrol solution. These details are mentioned because it has been suggested by certain writers that kératodermie blennorrhagique might be due to the treatment administered for gonorrhea, an idea that is abundantly disproved by a considera-

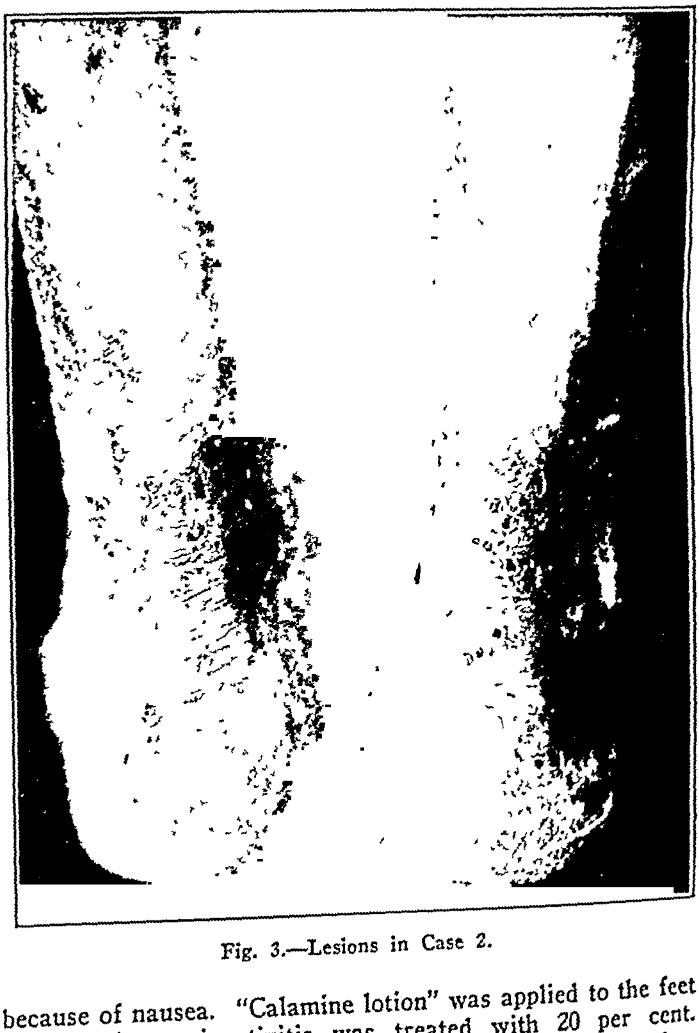

Fig. 3.—Lesions in Case 2.

tion of all the evidence. The cutaneous manifestations improved rapidly while this treatment was being carried out, and in five weeks had almost entirely disappeared, leaving reddish scaling macules to mark the sites of the former lesions. The patient was discharged from the hospital, Jan. 5, 1914, much improved, but still complaining of stiffness in the joints which had been affected.

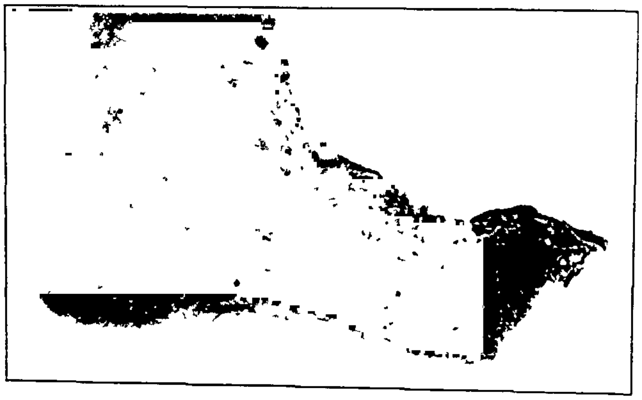

Fig. 4.—Lesions in Case 2.

CASE 2.—*History.*—A man, aged 43, American, cook, who entered Cook County Hospital, May 31, 1916, had suffered from several previous attacks of gonorrhea, the first one beginning in July, 1896. About four weeks later, gonorrheal arthritis appeared. It affected both ankles and feet, as well as the right thumb, and lasted for about one year. The patient stated that he had also had gonorrhea in 1904 and 1908, but that the attacks were of comparatively short duration and unaccompanied by joint involvement. He also stated that he had contracted syphilis in 1898. His present illness began, May 14, 1916, with painful micturition and a purulent urethral discharge about one week after exposure. Two weeks later the right eye began to burn and itch, and became very red. Two days afterward the left eye was similarly affected. On examination both conjunctivae were found to be markedly injected. Considerable photophobia was present. A slight purulent discharge was also observed. Both corneas were clear, and the pupils were negative. Gonococci were found in a smear from the urethral discharge. The heart and lungs were normal, as were also the abdominal organs. The extremities were negative save for some pain and slight deformity, with stiffness about the feet, ankles and right thumb, which had been previously attacked by gonorrheal rheumatism.

Six days after the admission of the patient to the hospital, a papular eruption appeared on the backs of both feet, about the malleoli and on the soles. A few lesions were seen on the fingers, especially along the sides of both index fingers. Soon thereafter a few scattered lesions appeared on the upper abdomen, lower chest and left side of the trunk.

The head, face, back, arms, forearms and upper chest were free from skin lesions. Scattered over the lower chest, upper abdomen and left side of the trunk were about twelve lesions. They were well defined, circular, flat topped, and each was covered by a thin, dirty, grayish, adherent crust. This crust imparted a hornlike sensation to the finger when it was palpated. On its removal a smooth, slightly infiltrated, moist, reddish surface was exposed to view. When these crusts were more closely examined they proved to be moist, and hence were not due to a true hyperkeratosis, but rather to a deficient cornification or parakeratosis. No central umbilication or elevation was noted. Each lesion was entirely covered by its crust, the whole being a reddish brown. Several of these lesions on the trunk bore a marked resemblance to small rupial syphilids. They averaged from 3 to 5 mm. in diameter. The larger ones attained an elevation of 3 mm. above the surrounding skin, with which their sides formed acute angles.

Along the lateral aspects of the index fingers were a few lesions. They were smaller than those already described, measuring from 2 to 3 mm. in diameter. A surrounding reddish zone marked each one off sharply from the adjacent integument. Their tops were formed by small horny crusts. These lesions were elevated centrally, and are best described as acuminate. The palms were not thickened; neither was there involvement of the finger nails.

The genitals, buttocks, thighs and lower legs down to a short distance above the malleoli were free from lesions. Below that point numerous symmetrical lesions were present, especially over the right Achilles tendon, on the soles and backs of both feet, and on the superior and internal surfaces of the left great toe. The majority of these were horny papules. On the backs of both feet were a number of papules not exceeding 2 mm. in diameter. They were most numerous over the flexor tendons, especially about the metatarsophalangeal junctions. These lesions were brownish, hard and well defined. Each one was capped by a dry, horny crust, which adhered firmly to it. On the inner surface of the left great toe were a number of closely aggregated lesions appearing like a miniature mountain range. They were dark red, conelike, and about 3 mm. in diameter. Two of a similar sort were noted along the internal border of the same foot. Over both Achilles tendons, especially the right one, were a number of conelike lesions, some of which were centrally depressed. They had a tendency to linear arrangement in threes, which was unusual. As to size, they corresponded closely to those already described on the backs of the feet.

The most characteristic lesions were found on the soles, being more numerous on the left side. They were circular, reddish brown papules, each one covered with a closely adherent crust. Each lesion possessed a surrounding zone of inflammation about 2 mm. in width. These cornlike papules were about 3 to 4 mm. in diameter, and as regards form, bore a striking resemblance to upholstery tacks which had been set into the skin. They showed only a slight tendency to grouping, and the hill and valley appearance was entirely lacking. A few were more yellowish and resembled drops of wax, to which Vidal compared them. Most of these

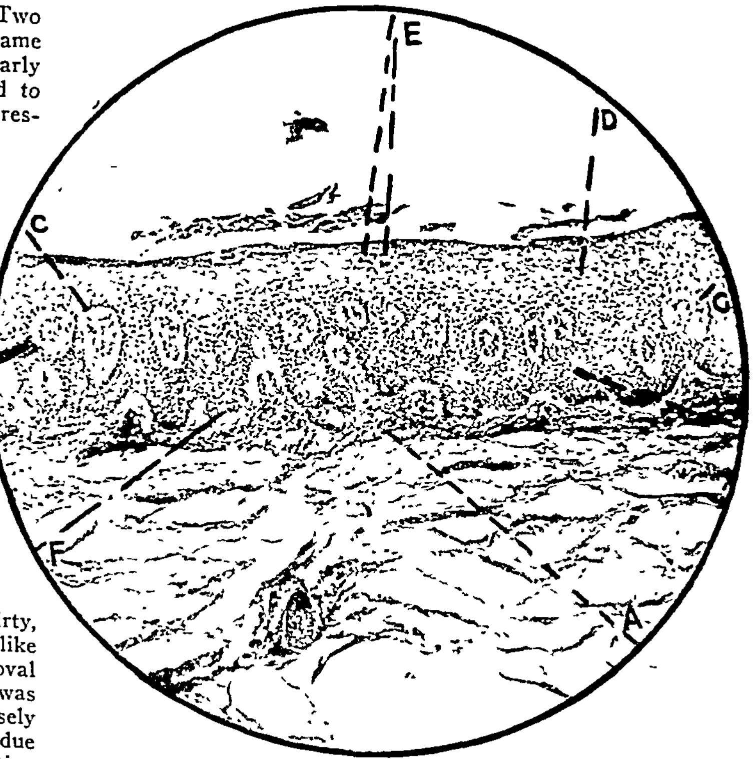

Fig. 5.—Microscopic appearance of lesion, × 60: *A*, infiltrate in papilla and subpapillary layer; *B*, thickened epidermis (acanthosis); *C*, edematous papillae; *D*, markedly edematous epidermis; *E*, pustules in epidermis; *F*, normal basal layer.

lesions were to be found on the anterior portions of the soles, especially about the region of the metatarsal bones. Thickening of the soles was not present in this case. The flexor surfaces of the toes were free. The toe nails were not affected

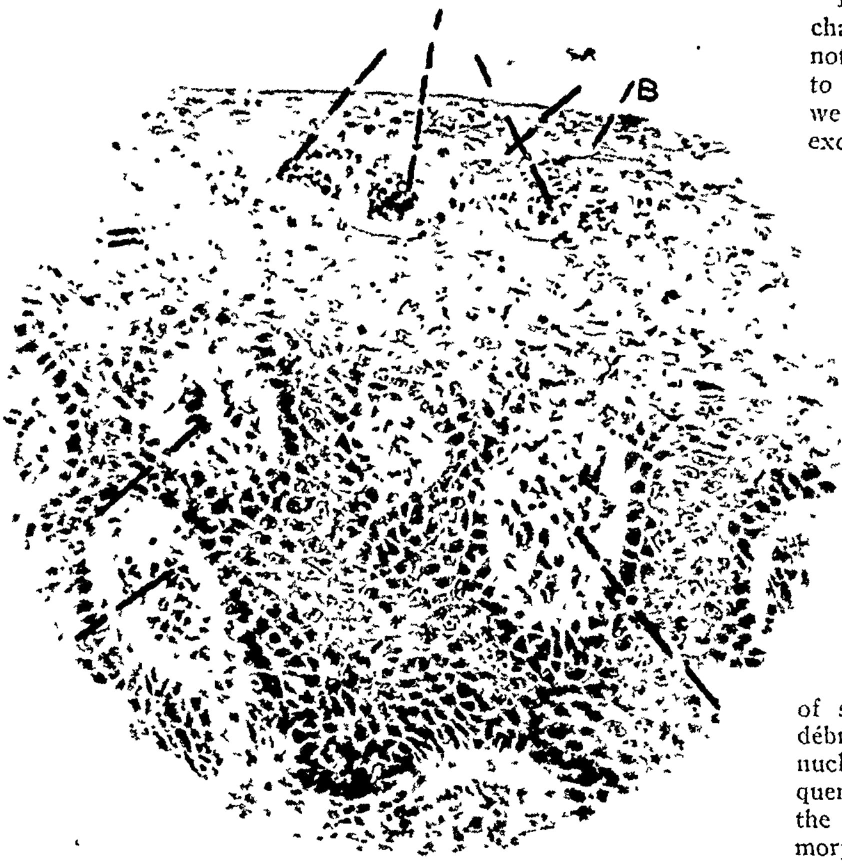

Fig. 6—From same section, showing center of Figure 1, × 230 *A,* edematous papillae; *B,* vesicles; *C,* pustules; *D,* polymorphonuclear leukocytes in epidermis.

No lesions were present on the visible mucous membranes. All of the lesions in both cases began as small, brownish, cornlike crusts, feeling to the palpating finger much like small tacks embedded in the skin. No initial vesicular or pustular stage was noted clinically. The vesicles and pustules present were found only on microscopic examination. As the lesions disappeared, they left behind reddish macules which scaled slightly. No subjective symptoms were present, save a slight itching at times.

The patient lost considerable weight and strength during his stay in the hospital. In August he developed a mitral insufficiency accompanied by edema of the lower limbs and dyspnea. At that time his eyes were normal. Gonococci had not been found in the smears from the eyes. He developed an acute iritis, June 19, 1916 About that time the feet, ankles and right thumb became stiff and sensitive to pressure The thumb took on the "radish-like" form which Fournier has described as occurring in gonorrheal rheumatism. In this case the eruption was treated with Lassar's paste. Four injections of typhoid vaccine were given intravenously with the hope of influencing the arthritis, some beneficial effect being apparently produced.

Aug. 31, 1916, the patient was discharged from the hospital On that date his eyes were normal, but the arthritis and heart condition were still present, although not so marked as to confine him to bed.

Microscopic Report.—For microscopic study, several cutaneous lesions were removed from both patients. As the findings were practically identical, we shall limit ourselves to a description of the microscopic appearances seen in the second case.

Our biopsy included one large lesion and a smaller one as well from the external plantar surface of the right foot. They were typical lesions, each being covered by a cornlike cap. The fragment of skin was fixed in alcohol and embedded in paraffin. Most of the sections were stained with hematoxylin and eosin, although polychrome methylene blue and glycerin-ether mixture were employed in coloring a few. Satisfactory sections of the horny cap were not obtained, owing to its extreme brittleness.

Epidermis: This was the seat of the most characteristic changes. It was increased in thickness (acanthosis), owing not only to a proliferation of the prickle-cell layer, but also to the presence of marked edema in its upper portion. We were able to ascertain that the horny crusts which capped the excised lesions were due to a mixed hyperkeratosis and parakeratosis, the latter predominating. The so-called transitional layers were markedly affected, the upper layer or stratum lucidum being absent, and the lower layer (stratum granulosum) being present only here and there in a rudimentary form. The granular layer cells which remained kept their customary lozenge-like form, but each nucleus was situated in the midst of a clear space instead of being closely surrounded by the deeply staining keratohyaline granules. Besides the evidence of deficient cornification as shown by the presence of nuclei in the horny layer and the abnormal granular layer, we found numerous leukocytes in these locations. They were chiefly polymorphonuclear neutrophils. The presence of numerous tiny cavities in the upper portion of the prickle-cell layer also attracted the attention. Since they were surrounded by distorted and flattened cells, which show the results of spongiosis or edema of the epidermis, we knew them to be vesicles. Their contents consisted of serum and cells of several sorts—polymorphonuclears, lymphocytes and the débris of epidermal cells. Among these an occasional multinucleated cell called to mind the balloon cells so frequently found in the vesicles of herpes zoster. Certain of the cavities described above contained a number of polymorphonuclear leukocytes, and hence were pustules. Most of the pustules and vesicles were to be found in the upper portion of the epidermis just below the point at which the stratum granulosum is normally situated. The existing edema was intercellular and intracellular as well. Quite a few of the

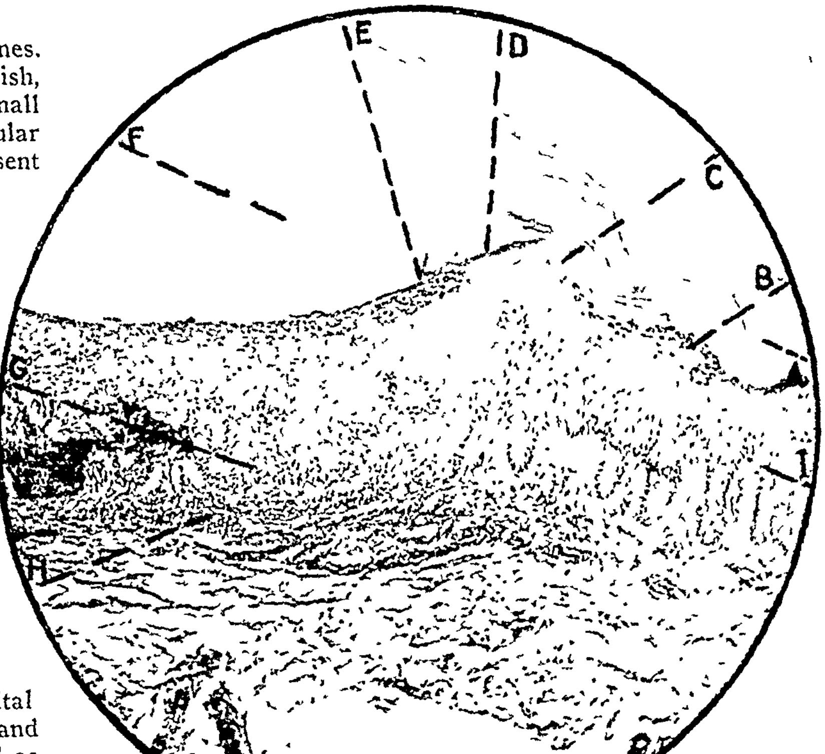

Fig 7—From same section, showing edge of Figure 5 with adjacent normal skin, × 60: *A,* thickened stratum corneum; *B,* normal granular layer; *C,* rudimentary granular layer; *D,* parakeratosis; *E,* pustules, and also many polymorphonuclear leukocytes in epidermis; *F,* space occupied by horny cap; *G,* thickened interpapillary process; *H,* round cell infiltrate, *I,* normal epidermis.

prickle cells showed the latter form to a marked degree, some even suggesting the *altération cavitaire* of Leloir. In some of the sections a large number of the cells were seen to have lost their prickles. Those adjacent to the stratum germinativum were more nearly normal. Throughout the entire section many leukocytes were found in the spaces between the epidermal cells. The germinal layer was only slightly affected, and as a rule offered its usual well defined wavy boundary between epidermis and derma. Occasionally it merged into the underlying inflammatory infiltrate. Here and there a marked edema of certain papillae flattened out the basal-layer cells; elsewhere their cylindric contour was retained.

Derma: The papillae were swollen and edematous. Their vessels were dilated and surrounded by an infiltrate composed of polymorphonuclear leukocytes, connective tissue and round cells. Only a few plasma cells could be found. Farther down, in the subpapillary layer, we found a denser infiltrate similar in its composition to that of the papillae. This infiltrate was not distinctly perivascular, but was more or less evenly distributed. Some of the sweat gland glomeruli were surrounded by a sheath of round cells. The collagen and elastin were replaced in spots by the infiltrate. Several large blood vessels, which were situated just above the subcutaneous tissue and evidently belonged to the subdermic plexus, showed a marked proliferation of their walls and a perivascular sheath of round cells.

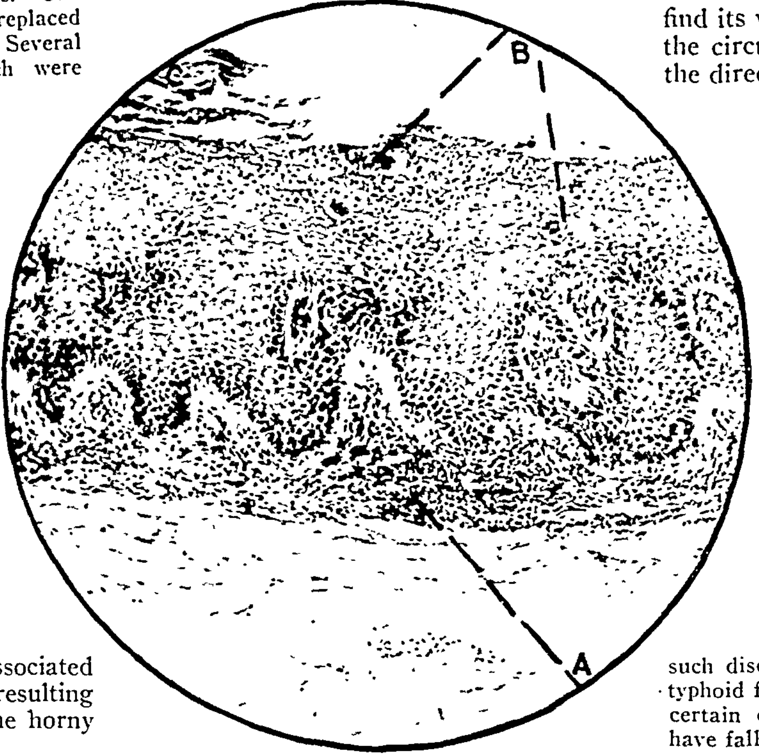

Fig. 8.—From same section but showing another field, × 110: *A*, round-cell infiltrate; *B*, pustules; *C*, parakeratosis.

COMMENT

The most striking pathologic features of kératodermie blennorrhagique may be summarized as follows:

1. Marked edema resulting in vesiculation and later pustule formation.
2. Infiltration of leukocytes in both derma and epidermis.
3. Parakeratosis associated with hyperkeratosis, resulting in the formation of the horny cap on each lesion.

These findings agree in the main with those of Chauffard and Froin, Turnbull, Sobotka,[11] Buschke[19] and Baermann, all of whom have made extensive pathologic studies of cases of this unusual disorder. We would particularly emphasize the importance of vesicle and pustule formation, as well as the presence of parakeratosis in the horny cap.

With reference to the pathogenesis, it is interesting to note that in a patient with gonorrheal urethritis, Scholtz[20] found gonococci in subcutaneous abscesses which were associated with cutaneous lesions of urticarial and erythema nodosum type.

In a patient with acute gonorrhea who soon after its onset showed a generalized erythema-multiforme-like eruption, Hodara[6] found numerous gonococci in blood smears. He also was able to grow them, but could not find the organisms in excised cutaneous lesions.

Wadsack's[21] case is even more interesting as bearing on the pathogenesis. His patient was a man, aged 39, suffering a second time from gonorrhea. Five weeks after the onset, metastatic conjunctivitis and multiple arthritis appeared. Soon thereafter an eruption appeared which was much like a papular syphilid, but of a brighter color. It was most marked on the palms and soles, being also symmetrically present over the back and hypogastrium. The face, arms, legs and mouth were free. The lesions were linseed-sized papules. When the overlying scale was removed, a pinkish surface was exposed. Following their removal the scales were soon renewed. In one of these lesions gram-negative diplococci were found on microscopic examination. So far as we are aware, after a thorough review of the literature this is the only case of kératodermie blennorrhagique in which these organisms have been found.

In view of these findings it seems not improbable that the gonococcus itself may find its way to the skin through the circulation and thus act as the direct cause of the keratotic crusts characteristic of the disease.

59 East Madison Street
—32 North State Street.

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[20] Scholtz: Beiträge zur Biologie des Gonococcus, Arch. f. Dermat. u. Syph., 1899, 49, 1.

[21] Wadsack: Verhandl. d. Charité Gesellsch., May 10, 1906.

Puerperal Mortality.—According to a bulletin of the Children's Bureau, 15,000 mothers die each year in the United States from causes incident to maternity. This means that more women between 15 and 45 die from these causes than from any other except tuberculosis, though the deaths are largely preventable. While the death rates of such diseases as tuberculosis, typhoid fever, diphtheria, croup and certain other preventable diseases have fallen since 1900, the available figures for the registration area show no decrease in the number of deaths on account of childbirth. Two causes are assigned by the experts of the bureau for the present condition. One is that the hazards of childbirth have either been ignored or are accepted as unavoidable, and the second fundamental cause is the difficulty of securing adequate prenatal care and postpartum management. Even in the cities where there are many hospitals and qualified physicians, the proportion of women receiving hospital and qualified medical care in childbirth is small. In the rural districts physicians and hospitals are fewer or are harder to reach, and confinements frequently take place with no one present but the husband or neighboring women. Attention is called in the bulletin to the maternal and child welfare work as developed in New Zealand and in Canada, and a unit plan for a rural county in this country is suggested. This includes a rural nursing service centering at the county seat, with nurses trained to recognize dangerous symptoms in prospective mothers; an accessible county center of information about personal hygiene for such women; a cottage hospital, or beds in an accessible general hospital, and skilled attendance for each mother in the county.

New Instruments and Suggestions

THE USE OF RADIUM IN CANCER OF THE PROSTATE AND BLADDER

A PRESENTATION OF NEW INSTRUMENTS AND NEW METHODS OF USE*

Hugh Hampton Young, M.D., Baltimore

In 1913, Pasteau and DeGrais reported a few cases of cancer of the prostate and bladder in which truly striking results had been obtained by the use of radium introduced into the urethra through an ordinary catheter (Fig. 1). This led me, in 1914, to procure some radium and to try it in certain selected cases. It soon became evident that for accurate work much more exact methods and special instruments would be necessary, and in the machine shop of the Brady Institute I set about to design and construct instruments to meet the varying needs in vesical and prostatic cancer.

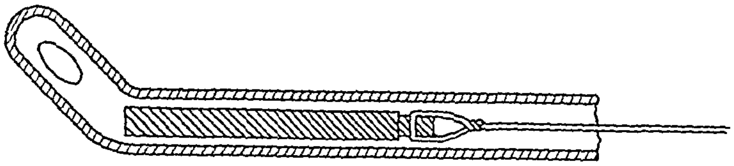

Fig. 1.—Catheter method of Pasteau and DeGrais for applying radium in cancer of bladder and prostate.

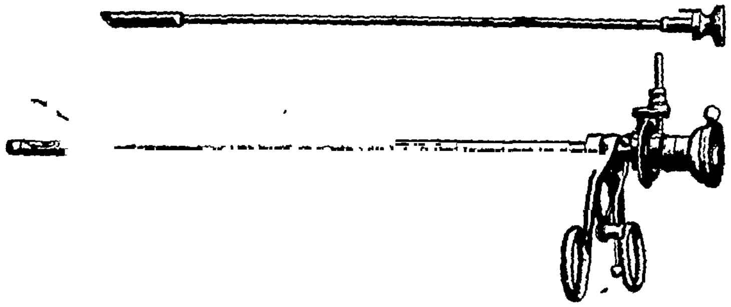

Fig. 2.—Author's cystoscopic rongeur for obtaining sections of vesical tumors for microscopic study.

The accompanying illustrations show the different models so well that little description is necessary. The small, straight cystoscope which is used in my cystoscopic rongeur (Fig. 2) was used as a basis around which to construct the various radium instruments.

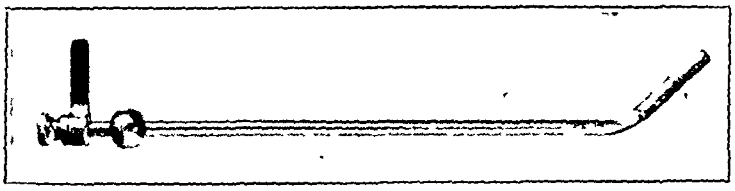

Fig. 3.—Author's Cystoscopic Radium Instrument 1 carrying a tube of radium in fenestrated platinum capsule in beak; closed with obturator.

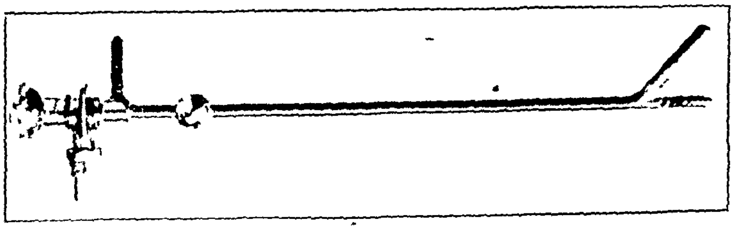

Fig. 4.—Instrument 1 with straight cystoscope introduced.

Radium Instrument 1 (Figs. 3 and 4) carries the radium in its beak. The slender glass tube containing the radium is enclosed in a platinum capsule which slips easily into the open tubular end of the beak of the instrument and is held there by friction. The instrument is passed through the urethra with an obturator (Fig. 3) which is then withdrawn, the bladder washed out and the cystoscope introduced (Fig. 4), making it possible to locate the region to be treated (Fig. 5 *a*) and to apply the capsule containing radium directly on it (Fig. 5 *b*). When in the proper position the instrument is held fixed by the mechanical hand attached to the cystoscopic table shown in operation in Figure 6. This instrument and accurate methods of use were demonstrated to several medical societies in 1915.

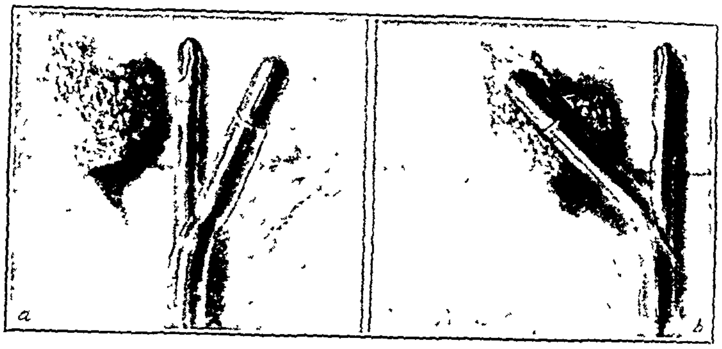

Fig. 5. (*a*) Observation of tumor through cystoscope. (*b*) Application of radium capsule against tumor.

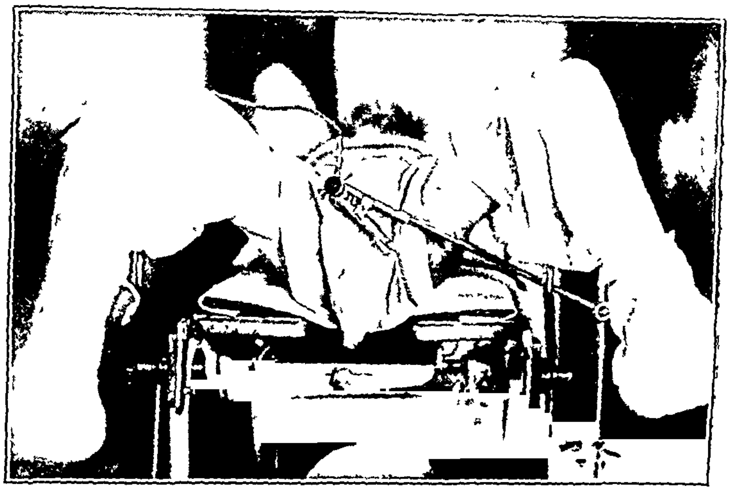

Fig. 6.—"Mechanical hand" or clamp holding radium instrument in position desired.

Radium Instrument 1 has proved satisfactory for applications to the neck of the bladder, trigon and certain portions of the lateral and posterior walls. It is usually easy to see satisfactorily with the cystoscope and to place the radium directly on the lesion to be treated.

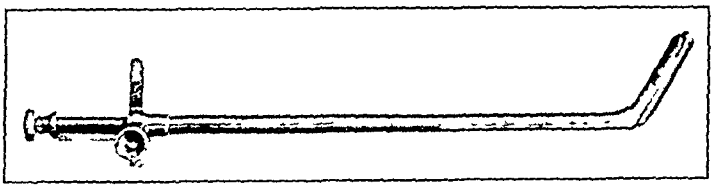

Fig. 7.—Author's Cystoscopic Radium Instrument 2 closed (radium in beak) with obturator.

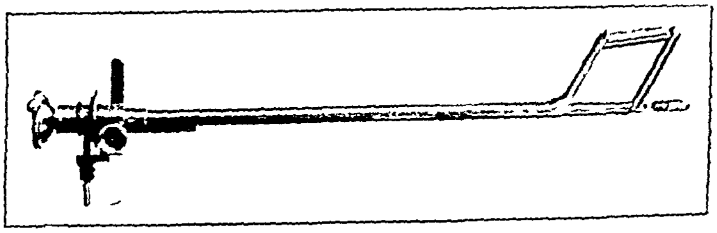

Fig. 8.—Instrument 2 opened ready for use in bladder.

For tumors well out on the lateral walls of the bladder or on the upper part of the anterior wall this instrument is not satisfactory, as the end and not the length of the radium tube is presented to the tumor. On this account another instrument was necessary, and to meet this need I have devised a second instrument.

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* From the James Buchanan Brady Urological Institute, Johns Hopkins Hospital.

As shown in Figure 7, Radium Instrument 2 carries the capsule of radium within the beak, which is made up of two hollow halves which, when separated by an external operating mechanism, carry the radium out to a position parallel to the shaft and about 2.5 cm. distant from it, as shown in Figure 8, in which it is in position to be placed against tumors quite remote from the middle of the bladder, as shown in Figure 9. This instrument has proved satisfactory in many such cases

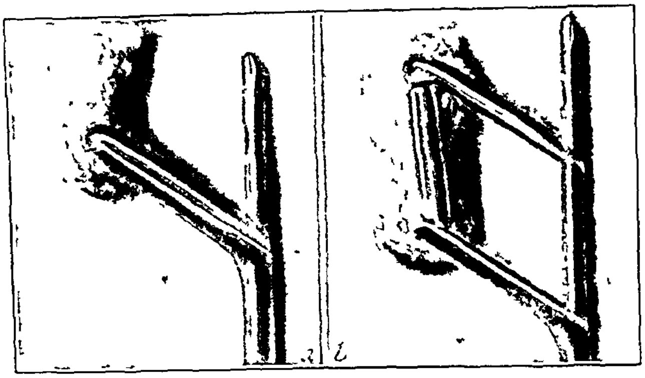

Fig 9—Instrument 2 in use: (*a*) inspection of tumor; (*b*) application of radium.

For tumors on the posterior wall of the bladder, still another instrument was desirable in order to place the radium broadside against them, as both instruments (1 and 2) here presented only the end of the radium tube to the posterior wall, and a third instrument was therefore designed, as shown in Figure 10.

As seen here, the beak carrying the radium revolves about its center (Fig. 11), being operated by two wires in the shaft and a screw outside. Figures 12 and 13 show the radium carried crosswise the shaft in position to be applied, under cystoscopic direction, to tumors on the posterior wall.

With these three instruments it is possible to place the radium flat (lengthwise) against a tumor in any part of the bladder, and to inspect it through the cystoscope from time to time, during the application A capsule with a fenestra along one side is usually employed in vesical tumors so that the radium may be placed unscreened directly against the neoplasm, but screened from the rest of the bladder. By this means we have been able to secure all the action of both beta and gamma rays, and at the same time have avoided burning the bladder in surrounding regions, thus making much longer treatments quite possible.

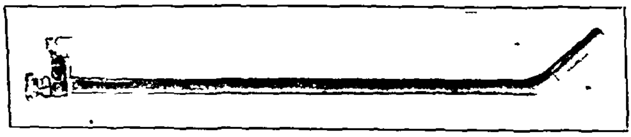

Fig 10—Author's Cystoscopic Radium Instrument 3 closed, with obturator.

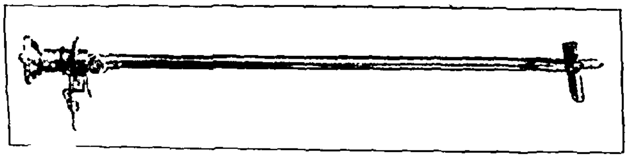

Fig 11—Instrument 3. beak with radium revolved for application to posterior wall.

The duration and frequency of the treatments vary according to the case, the tolerance of the individual and the size of the tumor. The instrument is held in the desired position by the mechanical arm, described before, and the treatment continues an hour or more if possible. Intensive treatments are desirable, and in order to shorten the applications in sensitive cases several hundred milligrams of radium in a high percentage of purity are required to secure the best results. The treatments are made every two or three days, if possible, and a different site on the surface of the tumor attacked each time. We have seen many large tumors respond rapidly, but sometimes a few fulgurations may be helpful in causing large tumor masses to slough away quickly, so that the base can be reached for direct radium applications (Fig. 14).

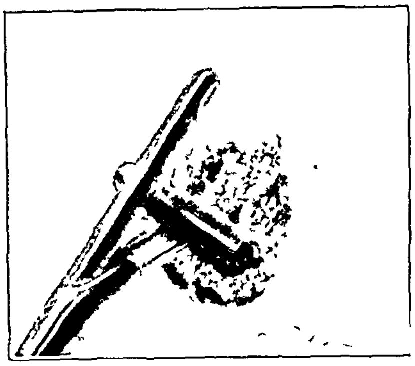

Fig 12—Instrument 3 in use against tumor on posterior wall of bladder.

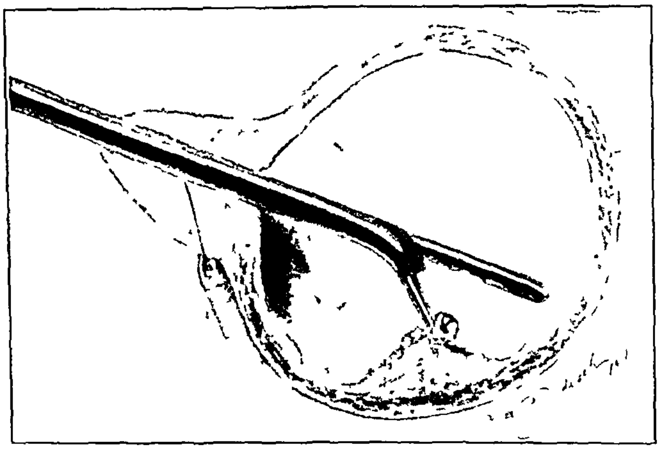

Fig 13—Sectional view, showing use of Instrument 3.

Later, with Dr. William Frontz, I shall report at length on the results obtained, some of which have been quite remarkable.

In cancer of the prostate, Instrument 1 (Fig. 3) has proved satisfactory, not only for intravesical but also for intraurethral and rectal applications of radium. In the urethra and rectum the cystoscope is not necessary. I usually employ a nontubular instrument (Fig. 15); but a finger in the rectum tells definitely when the beak of the instrument carrying the

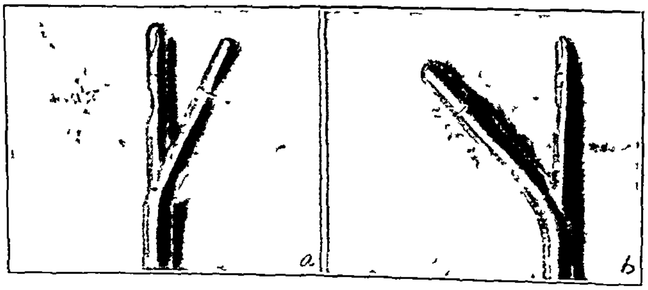

Fig 14—Application of radium to base of tumor destroyed by fulguration: (*a*) observation; (*b*) application.

metal filter, consisting of two circular pieces of finely meshed metal copper gauze between which is a layer of filter paper, fits snugly over the container, *D*, so that when the outer receptacles are screwed together the filter is firmly set.

The patient, according to instructions given him, inverts the sputum cup; takes out the antiformin container, *C*, and expectorates into the upper receptacle, *B*; when this is one-fourth full, he uncorks the container, *C*; pours its contents into the sputum; screws the cup together; throws away the container, *C*; inverts the cup, and sends it to the physician by parcel post, or retains the cup for twelve hours before bringing it to the physician's office.

Figure 2 represents the antiformin mixture passing downward into receptacle *D*. The antiformin dissolves the organic matter in the sputum and all other bacteria except the tubercle bacilli; the filter acts as a trap for the untouched bacilli enmeshed in the waxy insoluble material surrounding them; the shaking incident to the journey from patient to laboratory helps somewhat in the more rapid solution. The result is a residue on the filter which, when washed with sterile water to free it of antiformin, can at once be used as a smear, and stained with the usual Ziehl and Neelsen carbolfuchsin, which will reveal the presence or absence of tubercle bacilli.

The advantages of the antiformin sputum cup are the rapid application of the antiformin method and the expeditious determination of the nature of the suspected sputum. (When the specimen is received by the physician, the antiformin has already acted on the sputum for twelve hours or more). It obviates the necessity of recourse to any further time consuming investigation. The cup is compact in form, is easily sterilized by boiling, and the instructions to the patient can easily be followed out.

This cup has been of great practical use to me, and I hope it will meet the approval of all those who are devoted to this interesting field of medicine. I do not doubt that the cup can be materially improved.

145 South Orange Avenue.

PARAFFIN-COVERED BANDAGES*

Torald Sollmann, M.D., Cleveland

The use of paraffined bandages has been suggested by Fisher.[1] He dips the bandage into melted paraffin, and applies this directly to the wound as a nonimpregnable dressing. In principle, this is somewhat analogous to the paraffin films, although it differs in some essential respects.

Another use of paraffin in connection with bandaging occurred to me while working with the paraffin films, as reported in a previous paper: the painting of the surface of the finished dressing in situ with melted paraffin. The results were very promising. The bandage is stiffened so as to form a support, which in some cases may take the place of a splint, or even of a cast. It is weaker and somewhat more pliable, but very much lighter. It may also serve the purpose of fixing a bandage so that it does not slide on itself, and of protecting the surface of the bandage against moisture and dirt.

The bandage is prepared very simply by painting the outer layers of the ordinary bandage with melted paraffin. It is also feasible to paint the surface of the cotton directly, without application of any bandage. This, however, does not give as good a mold as the paraffin bandage.

The paraffin bandages can of course be easily removed by cutting them with scissors. Paraffin may also take the place of adhesive plaster, etc., for sealing the end of a bandage. The melted paraffin is simply painted over the edge after the bandage is in place. Another use is for painting the edge of the bandage where it is especially liable to become frayed or soiled, as at the wrist. A strip of melted paraffin may also be painted along one side of the bandage to keep the laps from sliding on each other.

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* From the Pharmacologic Laboratory of the Western Reserve University, School of Medicine.

[1] Fisher, H. E.: Nonadhering Surgical Gauze, The Journal A. M. A., March 25, 1916, p. 939.

Therapeutics

DISTURBANCES OF THE KIDNEYS

(*Continued from page 1043*)

TREATMENT OF CHRONIC NEPHRITIS

The therapy of chronic nephritis really involves the control of the disease and the management of the patient suffering with it. The title presupposes that we are not discussing an accidental albuminuria with or without casts, a lordotic (orthostatic) albuminuria, localized nephritis, or a kidney disturbance arising from a so-called surgical lesion, the cause of which must be treated before the management of the nephritis can be considered.

When the case has been diagnosed as one of chronic nephritis, its character and the probable prevailing type of lesion should be ascertained. If the nephritis has resulted from an acute infection, if it has become chronic in a young person, and if, judging from the amount of albumin, casts and edema, it is apparently a parenchymatous form of inflammation, the prognosis is unfavorable. If there are eye lesions, the prognosis is still more serious. If there is severe anemia, severe indigestion, and signs of chronic myocarditis, the prognosis is unsatisfactory. If the nephritis has apparently developed on a cardiac lesion, the prognosis may not be unfavorable, but a considerable although slow improvement may be expected. If the amount of urine is large and of low specific gravity, if there is only a limited amount of edema, if the patient is elderly, and, from the general heart tone, one concludes that the prevailing pathologic condition in the kidneys is of the interstitial variety, there is reasonable hope for a temporary cessation, or a retardation in the progress of the disease. True Bright's disease is cardiovascular-renal disease, the prognosis of which depends on the efficiency of the heart and the condition of the blood vessels. From the condition of the patient may be surmised, but not positively diagnosed, whether this disease will eventually culminate in death resulting from uremia, angina pectoris, sudden cardiac dilatation, or rupture of a blood vessel in the brain.

All positive causes for the chronic nephritis must be investigated, the probable causes, if possible, removed, and anything in the patient's life or situation that would aggravate the condition should be changed. Physical strain, an injurious position of the body, accidental or maintained at work, a faulty bed, abdominal ptosis — everything which tends to interfere with the kidney circulation should be corrected. Chronic localized infections should be sought and removed, such as infections of the gallbladder, of a gum, of a tonsil or of a sinus connected with the upper air passages. It is possible that the urinary symptoms — whether albumin or casts — may be the remnants of an acute or subacute infection of the kidneys which has not yet cleared up; if this is probable, rest, careful diet and warmth, or a change of climate, may bring about entire recovery. Repeated tests of function will show the excretory ability of the kidneys, and may aid in establishing the cause of the nephritis.

All removable causes and irritants having been abolished, the treatment of chronic nephritis becomes (1) control of the diet, and (2) of the clothing; (3) care of the skin; (4) hydrotherapeutic measures; (5) exercise; (6) care of the bowels, and (7) necessary medication.

CONTROL OF THE DIET

1. Although the diet in nephritis has just been discussed, some repetition and elaboration is pardonable on account of its importance. It may be advisable in the form of chronic nephritis in which the parenchymatous apparently predominates to eliminate meat entirely from the diet, at least temporarily, and to reduce the protein intake to the least amount which will sustain strength and prevent anemia. Scientifically, repeated function tests, repeated study of the twenty-four hour urine excretion on a known diet, and the blood tests for nonprotein nitrogen will indicate the best diet for the patient. It should be such as will not cause gastro-intestinal indigestion. If meat is to be allowed, red meat may be eaten as well as white in small quantities once a day. It should be remembered that fish, chicken and fowl come under the heading of meat. All beef extracts, beef teas and meat soups should be prohibited. Rich nucleoproteins should be restricted, if not prohibited; this includes liver, sweetbreads, shad roe, etc. If the blood pressure is not high, the patient may be allowed coffee and tea. On his digestion depends the amount of starch he may have; also whether the milk he drinks shall be skimmed or not. If meat is not allowed, the patient should eat more eggs, beans, peas, oatmeal gruel, bread, nuts and cheese.

The amount of water taken must be regulated according to the edema and the patient's need of water. If the specific gravity of the urine is low, as occurs in interstitial nephritis, he requires plenty of water to eliminate the salts. If edema is extensive, the amount of water and salt used must be reduced.

A patient on a meat-free diet should receive a small amount of iron daily. If this salt-free diet is long continued, he will probably need a small amount of dilute hydrochloric acid, not more than 5 drops, two or three times a day, after meals, according to the character of his food — a pure starch meal would not require hydrochloric acid.

The patient should be frequently weighed, and the hemoglobin reading frequently taken. If he is losing weight and edema is not reduced, the food is not sufficient. If the hemoglobin index is diminishing and there is actual loss of red corpuscles, his protein is insufficient, and he is not receiving, or at least metabolizing, a sufficient amount of iron. If the albumin excretion is large, he may lose weight and become anemic in spite of a proper diet. Such a patient should rest for a time. An increase in weight does not necessarily mean that the patient is improving, as this may indicate an increase of edema, perhaps of the concealed or internal variety.

Great fatigue on the least exertion may be an evidence that the patient's food is insufficient, that his heart is failing, or that he is toxic. Analysis of the blood pressure and the character of the heart action will show whether the heart is at fault or whether the blood pressure is too high and is causing dyspnea and fatigue. The hydrotherapeutic measures, sweating procedures, physical exercise or purging may be too severe, and should be modified. A blood test may show that he is retaining nitrogen. Under any circumstances, such fatigue, especially if associated with muscle cramps and generally increased nervousness, should be carefully investigated. Uremia may be impending.

Game meat should be avoided; fish and shellfish should not be eaten unless strictly fresh. While cheese is one of the best protein nutriments for a meatless diet, in certain instances it causes indigestion and should be avoided. All spices and highly seasoned sauces and dressings, canned foods and asparagus should be prohibited. Potatoes, turnips, parsnips, carrots, peas, beans, string beans, spinach, cabbage, cauliflower, watercress and celery may be eaten. In a meatless diet the protein nutriment is obtained from eggs, bread, milk, oatmeal, peas, beans and perhaps cheese. Nuts, thoroughly comminuted and swallowed as milky pulp, may be freely eaten if not difficult to digest. The amount of cereal, bread and potatoes which will be of profit to the system depends on the weight of the patient. He should not be allowed to gain weight, and surplus weight should be reduced if possible. When an obese person suffers from chronic nephritis, the most careful arrangement of diet and exercise is necessary to reduce the weight, to sustain the circulation, and to cause the kidneys the least possible irritation. If the patient is not obese, it is desirable that a moderate amount of sugar should be allowed. Fruits should usually be included in the diet unless contraindicated by the activity of the bowels and by the causing of gas or hyperacidity. Vinegar and pickles are usually injurious; on the other hand, dilute hydrochloric acid may at times be needed to aid digestion, as indicated by gastric indigestion and a heavily coated tongue.

In radically changing the ordinary diet of the patient with chronic nephritis, care must be exercised not to place too great a task on the various organs of the body. Many a patient who is suffering from chronic nephritis will thrive much better on a modified mixed diet, including meat, than on a heavy starch and vegetable protein diet.

The state of the blood pressure indicates whether or not the drinking of coffee and tea may be allowed. If the systolic blood pressure is above 160, or the diastolic above 105, all caffein should be avoided; otherwise an ordinary amount of tea and coffee need not be prohibited. Alcohol should be prohibited entirely, unless the patient is well advanced in years and has been accustomed to it, when a small amount may do no special harm. When there is evidence of congestion or disturbance of the liver, or when there is much intestinal indigestion, alcohol should always be prohibited.

A man accustomed to tobacco may use it moderately, unless the blood pressure is excessively high. In a habitual smoker who has stopped smoking, an irregular heart may be steadied by a return to the moderate use of tobacco. When an immoderate use of tobacco is forbidden a high blood pressure patient, the circulation should be studied and the amount of tobacco allowed found to be moderate in his particular case. If he can give it up entirely without circulatory debility, or if it can be reduced in amount gradually to total abstinence, without weakening the heart, this should be done.

(*To be continued*)

Medicine and Mystery.—Medicine has cast off the veil of mystery which once covered her face and walks among men uncovered and unashamed. The days of "divine healers," Indian medicine fakers, and of Mrs. Winslow and Lydia Pinkham, are passing away. Some may say that these statements are contradicted by the wide prevalence of Christian Science, osteopathy and other cults. These are only the vagaries which have taken form in the delirium-racked brain of a fast dying superstition.—V. C. Vaughan, M.D., *Science*, Dec. 8, 1916.

Special Article

THE MEDICAL OFFICER OF THE ARMY

I

THE ADMINISTRATION OF THE MEDICAL DEPARTMENT*

The Medical Department of the Army is divided into the Medical Corps, the Medical Reserve Corps (after June 1, 1917, the Medical Officers Reserve Corps), Nurse Corps, Dental Corps, Veterinary Corps, and the enlisted men of the Hospital Corps.

MEDICAL CORPS

The Medical Corps consists of commissioned medical officers; in June, 1916, there were 443 officers in this corps; since that time 150 more have been added, making a total of 593. The new Defense Act (1916) provides for a total number of 1,550, making necessary approximately 1,000 additional men. There is therefore an urgent demand for men to fill these permanent positions. The need is particularly apparent when it is considered that in round numbers 100 medical officers are required for every division of 20,000 men for service with the division itself, and without allowing for any hospitals in the rear. The ratio of rank, that is, the relative number of officers in each grade in the Medical Corps, is: colonel, 3.16 per cent.; lieutenant colonel, 5.42 per cent.; major, 23.7 per cent.; captains and lieutenants, 67.72 per cent. In other words, of each 100 officers there shall be the indicated number in each grade. If 1,550 officers are created as by the new Defense Act mentioned, there will be about 49 colonels, 84 lieutenant colonels, 367 majors and 1,050 captains and lieutenants.

MEDICAL RESERVE CORPS

The Medical Reserve Corps was organized, April 23, 1908, to furnish temporary medical officers for service with the army in time of war. The number of these officers in June, 1916, was 1,767 on the inactive list and 146 on the active list. Because of the shortage in officers of the regular corps, a number of the Reserve Corps officers have been on permanent duty for some time. But even were the total number ordered into active duty it would not be nearly sufficient for the needs of the army in time of war. The Medical Reserve Corps consists of three grades: lieutenants, captains and majors. On entrance into the service in time of war, the officers retain the same grade that they held while on inactive duty. An officer assigned to active duty on arrival at his first station is subjected to a critical physical examination. Following this examination, the board recommends whether or not the officers shall be continued on active duty.

During the recent concentration on the Mexican border, many officers of the Reserve Corps were sent to serve with the troops. Their service, which extended from one to three months, was valuable and gave them much needed instruction. In time of war these officers can be counted on as thoroughly familiar with the basic principles underlying their work.

CONTRACT SURGEONS

Prior to the formation of the Reserve Corps, 1908, contract surgeons, who contracted with the government for their services at $150 per month, were assigned to duty in places in which there was an insufficient number of regular medical officers to accomplish the necessary work. This service was found unsatisfactory not only for the government but also for the individual physicians employed, as the contract surgeon has no rights from a military standpoint. He could not even require a salute from a private soldier.

DENTAL CORPS

The Dental Corps is of comparatively recent organization, March 3, 1911. In June, 1916, it consisted of forty regular dental surgeons and thirty-five acting dental surgeons. The corps was rather loosely organized at first, but at present is complete. The new Defense Act provides for the following grades: first lieutenant on entrance and after eight years with an examination, promotion to captaincy and after twenty-four years a majority. The law provides that there shall not be more than fifteen majors in the regular service. Of course if the army is increased, the number of dental surgeons will be correspondingly increased. The service has been greatly developed recently, and the dental surgeons have given excellent service not only in caring for the teeth of the soldiers but also in oral surgery and in the development of Roentgen-ray work in the study of infections of the alveolar processes.

NURSE CORPS

The Nurse Corps was organized in 1901 following the experience of the Spanish-American War. During that war, volunteer nurses were depended on to a great extent. They had not been satisfactorily examined, and the service was not wholly satisfactory. The Nurse Corps consists of a superintendent of nurses, chief nurses, nurses, and reserve nurses. At present there are 150 head nurses and nurses. Nurses enter the service after a mental and physical examination, and are appointed for a period of three years. At the end of that time they may be discharged or reappointed, depending on their service and their wishes. The pay of a nurse is $50 a month, with $5 extra a month in the second enlistment period and $10 extra a month in the third period. Chief nurses receive $30 more per month and the yearly increases. In addition to the pay, a nurse receives her food and quarters, and her uniforms are laundered at the government's expense. The enrolled nurses of the American National Red Cross Nursing Service constitute the reserve of the Army Nurse Corps. The service in military hospitals is similar to the service in civil hospitals as far as the work of the nurse goes. There are, however, minor differences. This was appreciated at the time of the recent concentration on the Mexican border, and a large number of Red Cross nurses were sent down to the border to receive their training in the medical department.

SANITARY TROOPS

The soldiers, or the sanitary troops, as they are called, are an important part of the department. They are employed for the care of the wounded and their transportation to dressing stations, field hospitals and other hospitals in the rear. The service in hospitals at the front is also in their hands. The strength of the sanitary troops was increased by the Defense Act, and is at present 5 per cent. of the enlisted strength of the army. There are now between 5,000 and 6,000 men in the corps. This means that 25,000 sanitary troops will be needed for an army of 500,000 men. The enlistments in the medical department have been about as rapid as those in the line of the army. The grades in this branch are: private, $18 a month; corporal, $22 a month; sergeant, $36 a month; first class sergeant, $50 a month; hospital sergeant, $65 a month, and master hospital sergeant, $75 a month. The last two grades were added by the recent act of Congress. This pay is only a basis of calculation, for every soldier gets an increase of pay for every enlistment period. In addition he receives his food, clothing, quarters and medical service free of charge. For a soldier of the rank of first class sergeant or upward, quarters are provided for his family, and his family can purchase food from the hospital mess at cost. A number of officers in the line of the army have come from the enlisted strength of the medical department.

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* A list of references to previous articles and books on military problems appears in this issue under Medical Mobilization and the War.

DUTIES OF THE MEDICAL OFFICERS

The duties of a medical officer from a professional standpoint are similar to the work of the professional man in civil life. Opportunity is allowed for the development of specialties, and every officer showing an aptitude in any particular branch of medicine receives prompt encouragement to develop it. In peace, this professional service is at different army posts or army general hospitals. Each military station has a large, well equipped hospital with facilities for the proper care of the sick and disabled. The service is similar to that of civil hospitals, including a surgical service, a medical service, an eye, ear, nose and throat department, and a well equipped laboratory. Instruments and other apparatus are furnished by the government. There is an up-to-date library at every hospital; recent medical literature is added as soon as published. This work, in time of war or in active field service, is of the same character except that the service is carried on with more difficulty when the improvisation of equipment, etc., is required.

SANITARY CONTROL

One of the most important duties of a medical officer in peace and in war is the careful control of the sanitary conditions of the garrison or camp. A medical officer acts only in an advisory capacity. When he finds sanitary defects on his inspection, he reports them to the commanding officer with recommendations as to how these defects can be remedied. The commanding officer then decides whether or not he will follow the advice of his sanitary inspector. As a rule this advice is promptly followed, for the commanding officer has also received instruction in sanitary matters and can intelligently judge whether or not the recommendation is a good one. Sanitary inspection work in time of peace is similar to the work of the health department of cities and towns of the country, with the exception that the recommendations of the sanitary officer are more often followed. In time of war or in active field service this work becomes of great importance. Preventive medicine receives the greatest attention, and every endeavor must be used to prevent the occurrence of disease among the troops. A word of warning, though, must be given. No carping criticisms of conditions in camp should be indulged in. Every recommendation should be weighed carefully and its relative importance considered before it is presented to the commander of the camp or garrison.

RECRUITING

In addition to these duties, the Medical Department also does the recruiting work for the army. There are a large number of line officers on this duty, but they act only as advertising agents to obtain candidates for the army. These candidates are sent to the different recruiting depots, New York, Columbus, Ohio, St. Louis, Denver, San Antonio, Texas, and San Francisco. On arrival at these recruiting depots the recruit is carefully examined by medical officers, and, if accepted, is sworn in by a medical officer. He is then placed in a recruit company at the depot and receives his preliminary training. It must be emphasized that this work is of prime importance. It is necessary that no defectives be allowed to enter the service. It is of much more importance to obtain a small number of men physically effective than a large number of men who are liable to spend much time in the hospital and receive a pension on their discharge from the service.

INSTRUCTION

At every garrison, classes are conducted for the instruction of line officers in the duties of their profession. This instruction also includes a course in personal and camp hygiene which is conducted by a medical officer detailed for the purpose. The medical department also instructs soldiers in personal hygiene and in the subject of venereal disease, not only from the moral but also from the physical standpoint. At the army service schools at Leavenworth, Kan., to which officers are sent to receive an education in the higher command, some of the classes are conducted by a medical officer of the army. Instruction is given in hygiene, sanitation and sanitary tactics. By the latter is meant the work of the removal and care of the wounded on battlefield. A field service school for medical officers exists to which medical officers of the rank of major are sent yearly for instruction. This instruction is in sanitary tactics almost exclusively. Medical officers are also on duty with the militia as sanitary inspector instructors. These officers not only inspect the sanitary units of the various states but also outline instruction required for both the medical officers and enlisted men.

DIVISION SURGEON

The army of the United States in time of war is organized into divisions of about 20,000 men. On the staff of the division commander is a medical officer of the rank of lieutenant colonel, who is the division surgeon. He has complete control of the work of the medical department in that division and is responsible to the division commander for the effective handling of his department. Under him is a sanitary inspector of the rank of lieutenant colonel, who not only makes sanitary inspections of the command but also inspects the personnel and equipment of the various sanitary units to see that they are thoroughly ready for service at all times.

SANITARY INSPECTOR

A new departure in sanitary inspection that may be mentioned here was recently inaugurated by the War Department. This division inspector may be authorized by the division commander to correct sanitary defects without reference to higher authority — in other words, when defects are noted, to see that they are corrected immediately without the delay incident to the so-called "red tape" of the service. This plan was worked during the concentration on the border, and was found very satisfactory. No friction was incurred, and the work was expedited greatly.

(To be continued)

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SATURDAY, APRIL 21, 1917

OFFER YOUR SERVICES

We are printing this week forms of application for appointment in the Medical Corps of the Army, and also for appointment in the Officers Reserve Corps of the Army. These are identical with the official blanks. This gives each individual physician the opportunity TO ACT AT ONCE. The first blank — that for appointment in the Medical Corps, U. S. Army — will be used by those who apply for appointment in the regular Medical Corps, that is, for permanent service. These men must be under thirty-two years of age, and must have had one year in a hospital. If one is careful, one can remove this four-page insert without mutilating it. Of course only the blank used should be sent in. When the blank is filled out it should be sent to "The Surgeon-General, U. S. Army, Washington, D. C."

THE EFFECTS OF HIGH EXPLOSIVES

The introduction of high explosives into modern warfare has opened a new field in military medicine. Shells varying from several pounds to a ton in weight, filled with high explosives, not only cause enormous fatalities, but also make mental and physical wrecks of some who survive. The explosion shatters the shell into fragments which are thrown at high speed in every direction; in addition, the blast or the concussion may kill even at a considerable distance without the individual being touched by either shell or débris. Soldiers may be thrown out of the trenches or hurled yards into the air simply by the concussion. They may be buried by earth or trench débris. When the injured are brought to the ambulance, or casualty clearing stations, they are frequently dazed or unconscious and lie for hours or days in a lethargy, and may have few or no marks of traumatism, apart from superficial bruises. They are suffering from "shell shock." Later various symptoms may develop. These may be headache, backache, vasomotor disturbances and vertigo; not infrequently there are amnesia, speech defects (mutism, aphonia, stammering, etc.), sensory disturbances (hyperesthesia and anesthesia) and diminution or loss of sight and hearing. The latter is an important result of shell concussion.

So many of the soldiers returned with permanently injured hearing, some totally deaf, that the Medical Research Committee of the British War Office concluded to have a careful investigation made of the subject. Dr. J. Gordon Wilson,[1] who has given considerable study to inner ear troubles and who has published several reports of his investigations, was requested to make a report on injuries to the ear due to high explosives. His studies were to include the etiology, pathology and treatment. Ample opportunity was given to him to investigate these cases, not only in England, but also in France, where he spent two months at the front in order to study the cases in the early stages.

Dr. Wilson objects to the term "shell shock deafness." He prefers the term "shell concussion deafness" or the phrase "deafness due to high explosives." This preliminary report is based on examination of over eighty cases of nerve deafness due to high explosives and as many more supposed cases of deafness wrongly presumed to be due to the same cause. The study was carried on at the West Cliff Military Hospital, England. Patients admitted as suffering from "nerve deafness due to shell concussion" were divided into three groups: 1. Those with nerve deafness, the term "nerve deafness" being used in its wide sense of interruption of the auditory path. 2. Those who had had nerve deafness of varying degree and who had still the fixed idea that they could not hear; to this group belong those patients who yield to suggestion or recover hearing rapidly, often completely, after excitement or intense stimulation. 3. Malingerers, some of whom undoubtedly had shell concussion which affected the hearing, but recovered; others were malingerers pure and simple.

The present report is concerned with Group 1, which Dr. Wilson divides into: (*a*) Cases of nerve deafness associated with damage to the conducting mechanism of the external ear. (*b*) Cases of nerve deafness without any visible or demonstrable lesion in the conducting mechanism when they come under observation; this does not preclude the occurrence of a demonstrable lesion following the concussion; in fact, the history of many of these cases shows that this did occur. (*c*) Cases of nerve deafness in which there has been destruction of the cochlea and of the semicircular canals or their nerves. In each of the first two groups the loss may be partial or total; the third always causes total loss.

The symptoms associated with loss of hearing from high explosives fall within that group of nerve diseases called "traumatic neuroses." In many cases there is a recognizable physical trauma in the head or elsewhere received during a period of mental excitement. The symptoms are varied and complex. There are present, Wilson says, exaggeration of tendon reflexes, tremors, vasomotor disturbances, sweatings, lethargy, sleeplessness and headache. There are unsteady equilibrium with vertigo, and a concentric narrowing of the field of vision. In many cases, fields of anesthesia are present. In two cases of total deafness there were complete anesthesia and loss of thermal sense. In one with total loss in one ear and great diminution in the other there were anesthesia on one half of the body and hyperesthesia on the other. Speaking generally, there are here included some symptoms which are frequently grouped under the term "hysteria" and others under the term "neurasthenia."

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[1] Wilson, J. Gordon: Brit. Med. Jour., March 17, 1917, p. 353.

After giving the history of several cases selected more to show the variety rather than to emphasize the results, he discusses the hypothesis on which the treatment is based. The treatment, which is directed to stimulate the auditory pathway, on the whole is satisfactory.

Dr. Wilson's results may be briefly summarized as follows:

1. The normal stimulus (musical notes or the voice) is an adequate stimulus for the nerve and is the best stimulus. Electricity is contraindicated, and is liable to do harm since it easily produces vertigo.

2. Summation of stimuli plays an important part in the recovery of perception of sound. It is essential to differentiate vibrations from musical notes.

3. In shell concussion deafness there is diminution of perception and of duration of hearing along the whole series of forks, both through bone and through air. This diminution may be so great as totally to abolish perception of sound. It corresponds and exists *pari passu* with concentric limitation of the fields of vision. Often the two improve together. Frequently the field of vision is more retracted on the side having the greater deficiency of hearing.

4. If the conducting mechanism is damaged or destroyed, complete recovery cannot be expected. A trauma to the ear is frequently demonstrable.

5. The prognosis is good as a rule — at least for partial recovery.

6. As the deafness diminishes, there may persist for a long time an inability to grasp intelligently what is said or to retain the memory of it. A word may have to be repeated two or three times before the patient gets it; or if asked to repeat two or three numbers consecutively, he will repeat the last one; he knows there were others, but he did not get them.

The full explanation of the effects of high explosives on the central nervous system is not to be had at present. It is, however, just to recognize that these men have been injured in warfare and entitled to the honorable badge[2] which the wounded wear. It is easy to class these patients as hysterics or neurasthenics and pass on; but humanity demands more than this. "The thousands who suffer from these distressing symptoms deserve that medical science direct attention to their treatment. Rational treatment demands information; and rational treatment, not haphazard empiricism, ought to be given to those suffering from these distressing symptoms."[3]

THE DUTY OF THE ORGANIZED MEDICAL PROFESSION

THE JOURNAL desires to emphasize again that the organized profession can easily assume the burden — it should not be called a burden, however — of supplyin the Army and the Navy with a sufficient number of medical officers even for a force of 2,000,000 men, if such a force should be mobilized. But to do this it will be necessary for the state and county societies to realize their obligation in the matter. Every county society, no matter how small, should call its members together to discuss the subject. This ought to be done very soon. If it is done in the right way, it will make it possible to present to the Surgeons-General of the Army and of the Navy a list of available men, with all the necessary data regarding each. In the smaller counties where there is a limited number of physicians, it should be mutually determined how many men can be spared without too greatly reducing the supply of physicians in the locality and then who should volunteer their services. Naturally the result of such meetings should be reported to the secretary of the state association, who, in turn, should report to the Surgeon-General of the Army or to the secretary of the American Medical Association, as finally may be agreed on. In arranging for these meetings, one or two of the members should be selected to study up the matter so as to be prepared to outline to the assembly what is needed, especially as regards the physical and professional qualifications of the medical officer. THE JOURNAL has already published a large amount of literature on this subject, and it presents this week a suggestive list of books, pamphlets and official publications, as well as references to articles on the subject which have appeared in THE JOURNAL. It will be easy for those interested to secure the literature required.

Officers of the constituent state associations should consider the advisability of calling together the House of Delegates to discuss the matter, especially as it may affect their state. As will be noticed elsewhere in this issue, this has already been done by Michigan. The whole state would be more likely to be represented in the House of Delegates than in a meeting of the general body; in the latter case the attendance probably would be limited to those in the immediate locality. If delegates are called together, each county secretary should see to it that at least one delegate from his county attends the meeting.

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[2] Soldiers wounded by the enemy wear a short, narrow strip of gold braid on the sleeve.

[3] Wilson, J. Gordon: Brit. Med. Jour., March 17, 1917, p. 355.

We appeal to the officers of the various constituent state and component county societies of the American Medical Association to realize the importance of this matter, and to appreciate the responsibility that rests on the organized profession to supply the nation with the necessary number of qualified medical officers. There is no reason for hysteria in this matter; there is need for calm, judicious action, so that the medical profession may in a tangible, practical way show that it is prepared to do its part.

HIGH COST OF LIVING AND HOSPITAL EXPENDITURES

An expert estimate, made by the national department of labor, of the changes in the cost of commodities indicates that if a dollar's worth of food bought in 1907 weighed 10 pounds it would weigh today only a trifle more than 7 pounds. This increase in cost has been particularly marked within the past few months. So far as this is compensated for by a proportionate increase in wages or salaries of persons, or by an augmented income arising from enlarged endowments or collections in the case of institutions, there may be no reduction in the purchasing power of the funds available. There are always, however, certain groups of interests in the community which do not share an increment in income commensurate with the advance in operating expenses and the cost of living. In such circumstances the problem of intelligent economy is brought prominently into the foreground of necessity.

Public hospitals, as a rule, derive their income for operation from sources that do not adjust themselves promptly to altered costs. Situations like the present which increase charges for food and labor may actually lead to retrenchment on the part of contributors to philanthropic purposes. Furthermore, even when institutional incomes are not materially affected by hard times, the budgets are usually made up and provided for long in advance of the expenditures actually contemplated; and all too often the margin for possible advance in costs is too small to permit operation of the plant on the scale proposed. It is not unworthy for institutions that aspire to do the greatest possible good to expand their efforts so as to make the last penny count. A far-sighted business man has more than once saved the day for an overzealous board of managers by introducing a margin of safety into the budget of expenditures.

How an unexpected threat of inadequate appropriation for projected hospital work can be met has recently been told by Dr. Fowler,[1] superintendent of the Louisville City Hospital. This institution has no income other than an annual appropriation made by the city government, the sum being based on earlier operating expenses. At the end of October it was found that, owing to advanced prices, the expenditures were exceeding the allowance by $2,000 a month. A few details of the consequent schemes for retrenchment are of immediate interest to physicians quite as much as to managers of institutions. The surgical department was required to exercise the utmost economy in the use of surgical dressings, gauze, cotton, plaster, catgut and alcohol. The cooperation of the entire staff was urged to cut down the number of hospital days of patients, allowing them to leave as soon as possible, and utilizing the cooperation of the district nurses' social service department to this end. The use of only well established drugs was emphasized. Great economies were introduced, without detriment to the patients, in the use of gauze and dressings; and every material which was not permanently damaged by use was returned to stock for employment in one of the many ways in which textiles can be utilized. The laundry expenses were cut down one-fourth by intelligent cooperation and emancipation from routine rules in the use of linens. Unnecessary waste of soap, soda and bluing was averted with a simultaneous saving of hot water; 150 pounds of soap a month were spared in this way. To these were added savings in the steward's department and economies in the pharmacy and even in the laboratory, where the crime of waste has been emphasized and all required products prepared on the spot as far as possible.

This gives, in briefest outline, an indication of how an increase in prices approximating 30 per cent. may be met, to a great extent at least. But there is a further wholesome lesson in the situation. It teaches to what extent the indifference and lavishness acquired in days of overflowing generosity may lead to habits of unnecessary extravagance. There is no occasion for unjustifiable procedures in any field of human endeavor, least of all in philanthropic enterprises. Hardships sometimes institute beneficent reforms.

A RESTRICTED DIET

The expression "restricted diet" has acquired new significance as the result of recent studies in nutrition. Formerly these words directed attention to some obvious deficiency in the food supply, such as a deficit in calories or a low content of protein. A growing recognition of the importance of suitable inorganic salts, of the now undeniable need of water-soluble and fat-soluble unidentified dietary factors — the vitamins — and of an appropriate kind as well as amount of protein makes the problem of furnishing a truly unrestricted diet less simple than it appeared a few years ago. Seemingly slight deficiencies in the diet may render the milk secreted by the consumer of the inadequate food unsuited for the nourishment of the young.[1]

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[1] Fowler, J. W.: Solving the Problem of the High Cost of Living in the Hospital, Mod. Hosp., 1917, 8, 90. The statements above are taken from this article.

[1] The Relation of the Mother to Some Dietary Factors in Milk, editorial, THE JOURNAL A. M. A., March 10, 1917, p. 782.

The nursing mother affected with beriberi is liable to produce milk which, though apparently of normal gross chemical composition, is deficient in some unidentified component to the extent of provoking infantile beriberi in her suckling young.

Such facts need to be emphasized over and over again at a time when the physician as well as the layman still hesitates to modify his inherited conceptions, and adheres strictly to the older views of diet. Nature has given us few single sources of adequate nutrition like milk. The long used cereal grains, like corn and wheat, might seem to have much to commend them as appropriate foods. Yet it is now known that young animals cannot grow properly when confined to the maize kernel as the sole source of nutriment. The reason for this has become clear.[2] The proteins of the maize kernel contain all the amino acids essential for growth, but the proportions of certain of them are such that they are not utilizable to a high degree as the sole source of protein. The inorganic content of the corn kernel is not of a character suitable for the promotion of growth. It has been found necessary to make salt additions to rations deriving their inorganic contents principally from this source, regardless of the nature of the other purified food ingredients added, before growth can take place. The fat-soluble dietary factor also is not sufficiently abundant in unfortified maize rations. But when the maize kernel is supplemented by the addition of suitable protein, inorganic salts and butter fat or other sources of the fat-soluble vitamin, normal nutrition becomes possible. The water-soluble unidentified dietary factor or vitamin is present, therefore, in sufficient abundance.

Wheat, likewise, has its shortcomings as a sole source of nutrients.[3] Rations restricted to wheat, even when apparently "balanced" in the older sense of supplying sufficient protein, calories and mineral matter, have invariably failed to produce viable young in any of the species on which the tests have been made. The damage may not be clearly apparent until the progeny is examined; hence the importance of a thorough mastery of the questions at issue by comprehensive investigations on the experimental animals.

The fact that neither wheat proteins alone nor corn proteins alone can satisfy nutritive needs, even in the midst of a liberal supply of all other known diet constituents, demonstrates anew that the proteins are by no means of equivalent values as sources of nitrogen. Furthermore, it is becoming evident that none of the cereal grains contain in the usually ingested portions sufficient of the fat-soluble vitamin which milk fat and egg yolk carry to meet the demands of a growing animal. Highly purified foods like starch, sucrose or table fats, on the other hand, contain none of the water-soluble as yet unidentified dietary factor, such as is recognized in relation to the cure of beriberi. The latter type of vitamin must be sought elsewhere in naturally occurring food materials.

Some of the features of the newer studies have long been appreciated; many of them are decidedly novel. McCollum has presented the situation as follows:

> If an animal can grow to maturity, reproduce, and rear young on a monotonous diet of purified protein, carbohydrate, butter fat and salt mixture, to which a little water or alcoholic extract of a grain is added, it is evident that all the complexes essential for complete nutrition are present in the mixture. There is abundant experience to prove that the protein of the ration may be a phosphorus-containing one, such as casein from milk, or it may be a phosphorus-free protein, as albumin of egg. The young animal can draw all the phosphorus needed from simple inorganic phosphates, which are furnished in the salt mixture added to its food. In the course of many trials I have never seen growth enhanced by the addition of organic phosphorus compounds.

With the recognition of heretofore unappreciated and indispensable factors to be taken into consideration, it may now happen that what was once considered a liberal diet may prove to be an unexpectedly restricted one in the present-day sense.

Current Comment

THE WAR AND MEDICAL RESEARCH

"Who is going to care about a streptococcus six months from now?" said a well-known pathologist. War is declared; men's minds are on preparedness, on the food supply, on soldiers and on the wounded. Attention has shifted from the ordinary problems of life to the great topic. And so, too, the attention of research workers will shift from those phases of medical research which concern the cultural characteristics of micro-organisms, the intricate anatomy of the lower forms of life, the molecular arrangement of unknown minor constituents of the urine, to the broad problem of putting as many men as possible at the front, keeping them there and getting them back again as quickly as possible when the exigencies of war cause their temporary removal to the hospital. Research abroad is now concerned with the effects of shrapnel on the body, with the ability to inoculate the soldier against the many epidemic diseases that confront him, with the control of tetanus and with the control of tuberculosis, which is extensive among the soldiers of France. Whole wards are filled with patients suffering from nephritis; with cases of insufficiency of the heart attributed to the terrible strain of forced marches; entire hospitals are devoted to soldiers suffering from shell shock; to wounds of the brain or similar war injuries. The individual is lost in the mass. And thus the focus of medical research shifts in war time. Laboratory and research workers leave their laboratories to devote themselves to problems which concern not the disabilities of individual men, but the disabilities of groups of thousands of men.

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[2] McCollum, E. V.; Simmonds, N., and Pitz, W.: Dietary Deficiencies of the Maize Kernel, Jour. Biol. Chem., 1916, 28, 153.

[3] McCollum, E. V.; Simmonds, N., and Pitz, W.: The Effects of Feeding the Proteins of the Wheat Kernel at Different Planes of Intake, Jour. Biol. Chem., 1916, 28, 211.

WAR AND HEALTH

The enthusiasm for useful service of some sort, which has been awakened among all ages and classes of our population, and in all walks of life, is not to be without advantages in the domain of both personal and public hygiene. War, with its indeterminable emergencies, its unusual vicissitudes, and its specialized demands in the most diverse directions, has often forced attention to innumerable problems that pertain to health. The elimination of the ravages of disease among active troops has redounded to the credit of modern sanitation and prophylaxis. Military hygiene has set as its goal the attainment and conservation of health in the great body of fighting forces. There is much to be accomplished in the direction of eradicating unnecessary physical inferiority or deterioration associated with disease in all armies and navies. For some of the difficulties that present themselves an effective immediate solution is not in sight. In other cases, notably such as are represented by the incidence of typhoid fever and other infections among troops, the lessons of science are being applied with success. In any event, the world war has pointed to many defects which need remedies. It is a wholesome task to apply the contributions of the past when the opportunity arises; but there should be no hesitancy on the part of science to admit its shortcomings at all times and to feel them as a stimulus to further endeavor. This deserves to be emphasized, because in some quarters the admission of the need of investigation is looked on as an indication of the poverty of science and its indifference to practical applications. The conservation of health and the development of physical fitness are a soldier's first duty. Marksmanship, military tactics, drill and cooperation avail comparatively little when energy, strength and perfection of bodily training are neglected or lacking. This has been demonstrated again and again among "unseasoned" troops. Hence it is that so much attention is properly being concentrated on the establishment of health and vigor among groups of men in training everywhere. Athletic exercises compete with gun drills for recognition in the routine of a future soldier. The unexpected adjunct to this is the widespread movement to apply the same principle of health conservation among those who cannot be expected to join the active fighting units. In many cities and towns the "home guards," composed of men beyond the usual military age, are already engaging in suitable physical exercises with the express purpose of rendering themselves more capable of the service which a sound body can best contribute. If the maintenance of vigor is a desideratum among the middle aged sedentary type of our citizens at all times, it becomes a positive duty in a crisis in which the highest cooperation of each individual is likely to be enlisted. Only a few months ago it might have been unusual to see any considerable number of business men of an age beyond 50 engaged actively in the pursuit of health as a patriotic duty. Today groups of such persons may be seen in more than one city cheerfully joining in a morning tramp to promote vigor, or responding to some special prescription of systematic exercise dictated by a medical examination under semiofficial auspices. Boy scouts and other young persons are similarly inspired. The war has brought an unprecedented desire on the part of many to attain *mens sana in corpore sano*. The obedience to a patriotic impulse is almost certain to bring unexpected hygienic rewards.

A REFINEMENT OF SPUTUM EXAMINATION

Different areas of the urinary tract are covered with epithelial linings of cells differing considerably in form. Skilful microscopic examination may enable the expert to differentiate or distinguish the structures from varying localities, such as the renal tissue, the pelvis of the kidney, the urethra, the bladder and other places. In pathologic conditions, as is well known, the number of cells from special regions may become greatly augmented, so that the disturbance of function is readily detected by the examination of the urinary sediment. Similarly the cavities and channels which communicate with the mouth are lined with epithelial cells often of quite unlike morphologic character. Otani,[1] of the Kitasato Institute for Infectious Diseases, Tokyo, states that the mouth and pharynx are lined with polygonal flat epithelial cells, and the vocal cords covered with them, while the nasal cavities, larynx, trachea and bronchi are lined with ciliated cylindric epithelial cells. The bronchioles and bronchi are lined with cuboidal cells, while the alveoli are lined with polygonal cells which, unlike those of the other organs, have no nuclei. If inflammation occurs in any of these organs, the cells are expectorated with the mucus. The sputum must therefore contain the epithelial cells of the affected organ. The characteristic forms may, however, disappear during chronic inflammation. In tuberculosis of the larynx, the ciliated epithelial cells lining this cavity, according to Otani, are supplanted by a new growth of polygonal flat epithelial cells like those of the mouth. The new type then appears in the sputum of laryngeal tuberculosis. In sputum from the lungs, round or elliptical epithelial cells, much larger than pus cells, are often present. It might seem difficult, therefore, to identify the origin of unexpected or modified forms. But Otani maintains that the saprophytes play an important part in determining the source of sputum. He states that in spite of the fact that various kinds of cocci, bacilli, spirochetes and spirilla are found in the nasal and mouth cavities and in the larynx and pharynx, the sputum from the trachea and lungs is always free from these nonpathogenic micro-organisms. The sputum from these organs contains only the agent of the prevailing disease, such as *Bacillus tuberculosis* or *Diplococcus pneumoniae*. In cases of mixed infections, one or two species of bacteria are found. Sputum from the lungs will become mixed with pharyngeal products in its passage to the mouth. It might accordingly seem that a separation of secretion from definite localities would become impossible because of this inevitable contamination. It has been shown,[1] however, that by careful treatment and washing of the material in isotonic salt solution it becomes free of extraneous elements, such as polygonal epithelial cells, which may have come into contact with it. Saliva is dissolved, and reliable observations may be made on the residues. Microscopic examination of suitable washed sputum indicates its source. Sputum from below the vocal cords is clear of saprophytes. Erythrocytes and the bacilli present may indicate the site of the lesion, as in pulmonary hemorrhage. Tubercle bacilli may be found in laryngeal sputum in cases of laryngeal affection when there are no subjective symptoms. The possible importance of the new suggestions in the routine of diagnostic examinations at once becomes apparent.

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[1] Otani, M.: The Significance of the Epithelial Cells and Saprophytes in Sputum, Jour. Exper. Med., 1917, 25, 333.

THE HEREDITARY ABSENCE OF PHALANGES

The more unusual abnormalities of development and structure in the human body were formerly often classified as "medical curiosities" without any particular reference to their origin or biologic significance. Modern studies in heredity have done much to lend a new interest to the unusual manifestations of form and function in living beings. Careful investigations of the phenomena of inheritance have shown that they are in many instances more or less amenable to scientific treatment. Characters may be transmitted in dormant form so that they do not appear in each generation; but when they crop out unexpectedly it often happens that a study of the pedigrees involved will readily disclose the supposedly new manifestation as a natural inheritance from earlier progenitors. Thus anomalies or defects may actually "run in families" instead of being the fortuitous expression of an inexplicable outburst of nature. Hypophalangism, or the congenital absence of one or more phalanges and the corresponding soft parts from a digit, is a rare deformity in man. One, two or three phalanges may be lacking, and sometimes the hypophalangism occurs in association with polydactylism. Supernumerary or syndactylic digits are apt to be retarded or stunted in development, and injuries may now and then arrest the subsequent development of a digit. Such conditions, however, are not to be included among the instances of true hypophalangism. Cragg and Drinkwater[1] have lately described an inherited hypophalangism of this sort which has persisted through five generations. The defect consists of an entire absence of the distal phalanges from each digit except the thumb and great toe, and an extremely abortive condition of the middle phalanx in the same digits. This is a far more imperfect development than is represented in the likewise rare brachydactyly caused by an abnormal shortness or abortive condition of the middle phalanges or metacarpal bones, the distal phalanges always being well developed. In the new cases the finger nail is absent, and the thumb abnormality is of a different type from that in the fingers, and is affected independently. The distal bone is double. The condition is bilaterally symmetrical, and the inheritance is not strictly mendelian as to all its features. In this family there are twenty-five abnormal and only seventeen normal persons descended from affected parents, so that the incidence of the defect is greater than one would expect. Brachydactylous families usually exhibit a shortness of stature; this is not observed in the newly described subjects of hypophalangism. The male members are mostly engaged in farm work, the female in domestic service. They find their hands no marked detriment except in looks. The remarkable persistence of a serious physical defect of this sort through so many generations cannot fail to awaken silent reflections on the more unsuspected yet equally significant hereditary transmission of mental as well as other abnormalities which have a more serious import for the well-being of the race.

ABROGATE THE PATENT ON SALVARSAN

The Journal has already commented on the difficulty in securing salvarsan, on the moral and ethical question as to whether or not it is justifiable for one person to control the output of a drug necessary to public health. This week we publish an account of the action of the St. Louis and Chicago medical societies, which are calling on the medical profession to appeal to their senators and congressmen to abrogate this patent. The Journal believes that this patent should be abrogated, not alone because the patentees have not supplied the demand, not alone because they have dictated to the medical profession who should have the drug and how much a physician might have, not alone because of the war with Germany, not alone because of the special needs of the government at this time for the control of venereal diseases, not alone because, as some claim, the patent at Washington does not correctly describe the product, but also because the people who are supplying this product are charging prices that are exorbitant compared to the price at which others in this country can supply it. The fact is that the salvarsan one can obtain today costs $4.50 per ampule of 0.6 gram, whereas the same dose of arsenobenzol — a preparation identical with if not better than salvarsan — costs $2.00 at retail, and as Dr. Schamberg says: "If we are permitted to continue marketing the same drug after the war, we can sell it at $1.00 or less per tube." To abrogate this patent would be doing an injury to no one. Certainly the patentees of salvarsan have already reaped their harvest — and a pretty rich one. The supply of salvarsan at a reasonable price in proportion to its actual cost of production is in the interest of the health of the entire population of the country, whereas to let matters rest as they are, is to the benefit of one man. While we are emphasizing here the cost, there is after all a greater question, and that is the supply necessary to help control the ravages of one of the most serious diseases which afflict humanity today. It is the duty of Congress to abrogate the patent on this preparation and, incidentally, on all medicinal preparations of importance.

Increase in Life Duration.—According to Dr. John N. Hurty, state health commissioner of Indiana, the average duration of life in Indiana has increased from 36.3 years in 1900 to 45.7 years in 1915.

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[1] Cragg, E., and Drinkwater, H.: Hereditary Absence of Phalanges Through Five Generations, Jour. Genetics, 1916, 6, 81.

Medical Mobilization and the War

GENERAL MEDICAL BOARD

Report of the Medical School Committee

At its meeting Sunday, April 15, this committee of the General Medical Board of the Advisory Commission of the Council of National Defense considered the plan of keeping the medical schools of the country in continuous operation as an emergency war measure. The committee consists of Drs. Arthur Dean Bevan, Thomas W. Huntington, Edward Martin, Charles H. Beck, Winford Smith and Joseph Marshall Flint, chairman.

If this plan is to succeed in the purpose for which it is proposed, namely, to produce a greater number of adequately trained men, that is, men with hospital experience, it is essential that its application be universal to enable hospitals to adjust themselves immediately to the changed conditions. This follows because hospitals and medical schools obviously are mutually dependent on the accustomed rhythm of the academic year for their demand and supply of men. It immediately developed that, on account of climatic conditions and the adoption of the Italian plan by certain medical schools, the inauguration of this scheme of continuous instruction could not be universal. The previous recommendations of the Hospital and Medical School Committee already adopted by the board to the effect that the staffs of these institutions should be reduced to the minimum necessary for routine work would make it practically impossible for them to adjust themselves to so radical a measure without danger of disorganization—the one thing the board feels it essential to prevent.

On the other hand, there can be no objection to a partial experimental adoption of the plan by those schools which are in a position to carry it out with a view to its wider adoption if necessary. The following conclusions were submitted for approval:

Voted that in the opinion of the Medical Board of the Council of National Defense, the present emergency does not justify it in advocating any universal change in the present scheme of adequate education of medical students. It is, however, in accord with a plan by which such medical schools as may be able can adopt an intensive course and operate continuously to graduate students earlier by the elimination of the usual vacation. It is the sense of this board, however, that the period of actual instruction should not be shortened to any degree.

As this plan of continuous operation has already been adopted by some medical schools, together with other urgent war measures such as the Italian plan, it is obvious that some modification of the rules governing the state boards of licensure becomes immediately necessary. The present crisis undoubtedly will develop other situations demanding similar decisions. It was not deemed wise, therefore, to ask the state boards to act on specific recommendations at this time, but rather to seek the power to cooperate with the medical board of the council and the medical schools in meeting any emergencies. With the idea of securing their cooperation not only for future unforeseen contingencies, but also for the specific problems presented in the continuous teaching plan, the so-called Italian plan—where medical students are taken to the front with Red Cross teaching units, and the possible use of medical students as hospital interns, the following recommendation was submitted:

> Voted that the Medical Board of the Council of National Defense requests the State Boards of Licensure or Registration to take such action as may be necessary to enable them to cooperate with it and the Medical Schools in modifying temporarily their rules of procedure to the extent which may be made necessary by the present national crisis.

It was recommended that the board forward for the immediate consideration of the state boards of licensure the following questions for decision:

(1) Recognition of the Continuous Teaching Plan as an equivalent of the usual four year course in Medicine.

(2) Recognition of work done by a student with a Red Cross Teaching Unit according to the Italian Plan as the equivalent of the work usually done in the School and Hospital at home.

(3) Recognition of substitute work as interne in teaching hospitals as an equivalent of equal amount of work in the fourth year of the Medical School.

Standardization of Medical Supplies

A week of activity on the part of the Medical Section of the Council of National Defense culminated in a meeting in Washington, D. C., April 15, of 150 of the leading manufacturers of medical and surgical supplies, called together by Dr. Franklin H. Martin of the Advisory Commission. The object of the meeting was to secure the cooperation of all manufacturers of medical and surgical supplies in producing an adequate supply of needed articles as well as the standardization of those articles. Addresses were made by Mr. Frank A. Scott, chairman of the General Munitions Board, and Dr. F. F. Simpson, chief of the Medical Section. Conferences were held with the manufacturers by Colonel Fisher, Colonel Snyder and Colonel Darnall of the army, by Surgeons Murphy and Richards of the navy and by Assistant Surgeon-General Rucker of the Public Health Service. The manufacturers appointed committees to make a survey of the material on hand and the present resources as well as for the concentration and increase of production. A list of necessary staple articles which can be reproduced in abundance is being made out. The General Munitions Board will determine the order in which all contracts are to be filled. If the capacity of existing plants is not sufficient, other plants will temporarily produce such articles as may be needed. A large number of manufacturers have tendered their plants to the government. On Wednesday and Thursday of last week, the Committee on Standardization of Medical and Surgical Supplies and Equipments met in Washington and appointed subcommittees on special lines. The members of the committee are: Col. Jefferson R. Kean, Lieut.-Col. Carl R. Darnall, Surg. T. W. Richards (secretary); Surg. Joseph W. Murphy, Asst. Surg.-Gen. W. C. Rucker, Dr. George W. Crile, Cleveland; Dr. Harvey Cushing, Boston; Dr. Charles L. Gibson, New York; Dr. Richard H. Harte, Philadelphia; Dr. Henry S. Plummer, Rochester, Minn., and Dr. Frank F. Simpson, Pittsburgh, chairman.

The subcommittees appointed are as follows:

Surgery.—Dr. J. M. T. Finney, Baltimore, Md.; Dr. Charles H. Mayo, Rochester, Minn.; Dr A. J. Ochsner, Chicago, Ill.; Dr. Rudolph Matas, New Orleans, La.; Dr. Richard H. Harte, Philadelphia, Pa.

Orthopedic Surgery.—Dr. Robert B. Osgood, Boston, Mass.; Dr. David Silver, Pittsburgh, Pa.; Dr. Joel E. Goldthwait, Boston, Mass.

Gynecology.—Dr. John G. Clark, Philadelphia, Pa.; Dr. William P. Graves, Boston, Mass.; Dr. Howard C. Taylor, New York, N. Y.

Eye.—Dr. Geo. E. DeSchweinitz, Philadelphia, Pa.; Dr. William H. Wilmer, Washington, D. C.; Dr. Edward B. Heckel, Pittsburgh, Pa.

Nose and Throat.—Dr. Chevalier Jackson, Pittsburgh, Pa.; Dr. W. B. Mason, Washington, D. C.

Genito-Urinary.—Dr. Hugh H. Young, Baltimore, Md.; Dr. W. F. Braasch, Rochester, Minn.; Dr. Frank Hagner, Washington, D. C.

Obstetrics.—Dr. J. Whitridge Williams, Baltimore, Md.; Dr. Barton C. Hirst, Philadelphia, Pa.; Dr. Palmer Findley, Omaha, Neb.

Roentgen-Ray.—Dr. G. C. Johnson, Pittsburgh, Pa.; Dr. Arthur C. Christy, Washington, D. C.; Dr. Arthur W. Goodspeed, Philadelphia.

Internal Medicine.—Dr. W. S. Thayer, Baltimore, Md.; Dr. Frank Billings, Chicago, Ill.; Dr. Hobart A. Hare, Philadelphia, Pa.

Neurology.—Dr. C. Loomis Dana, New York, N. Y.; Dr. Hugh T. Patrick, Chicago, Ill.; Dr. Daniel J. McCarthy, Philadelphia, Pa.

Dermatology.—Dr. Howard Fox, New York, N. Y.; Dr. Howard Morrow, San Francisco, Calif.

Contagious Diseases.—Dr. Richard P. Strong, Boston, Mass.; Dr. M. J. Rosenau, Boston, Mass.; Dr. Haven Emerson, New York, N. Y.

General Pathology.—Dr. William H. Welch, Baltimore, Md.; Dr. Simon Flexner, New York, N. Y.; Dr. Victor C. Vaughan, Ann Arbor, Mich.

Surgical Pathology.—Dr. Louis B. Wilson, Rochester, Minn.

Hospital Administration.—Dr. Winford H. Smith, Baltimore, Md.; Dr. Frederic A. Washburn, Boston, Mass.; Dr. B. W. Caldwell, Pittsburgh, Pa.; Dr. Warren L. Babcock, Detroit, Mich.; Dr. S. S. Goldwater, New York City.

Nursing.—Miss Anna Maxwell, New York, N. Y.; Miss Jane A. Delano, Washington, D. C.

Physiology.—Dr. W. B. Cannon, Boston, Mass.

Dentistry.—Dr. E. C. Kirk, Philadelphia, Pa.; Dr. Eugene Smith, Boston, Mass.

Chemistry.—Mr. Earl B. Phelps, Washington, D. C.

Pharmacy.—Dr. Reid Hunt, Boston, Mass.

New Appointments in Utah.—Drs. Guy J. van Scoyoc and R. T. Gellison, Salt Lake City, have been commissioned as lieutenants in the Medical Corps of the Utah National Guard.

Address to Omaha Physicians.—Col. John M. Banister, M. C., U. S. Army (retired), delivered an address before the Omaha-Douglas County Medical Association, April 3, on "Medical Needs of our Military Service in Case of War."

Dental Department a Hospital.—During continuance of the war, the new buildings of the Evans Dental Department, University of Pennsylvania, are to be converted into a 200 bed hospital for the active men of the army and navy.

Base Hospital for Toledo.—At the meeting of the Toledo (Ohio) Academy of Medicine, March 2, it was voted to establish a base hospital in Toledo. The Commerce Club of Toledo has pledged $30,000 for the establishment and maintenance of this hospital.

Field Hospital Returns Home.—The First Ohio Field Hospital, under the command of Major Frank W. Hendley, Cincinnati, returned home, March 28, after service on the southern frontier. A smoker was given to the company in the rooms of the Cincinnati Academy of Medicine, April 2.

Medical Dressings Needed in Europe.—The National Surgical Dressings Committee of America has made an urgent request for additional help. Between October 16 and December 16, the committee sent to France, England, Italy, Belgium, Serbia and Roumania a total of 1,265,609 dressings.

Lectures on Military Medicine.—The executive committee of the staff of St. Luke's Hospital, Cleveland, has made arrangements for Dr. Samuel W. Kelley to give a series of lectures on military medicine and surgery in the Carnegie East Building of St. Luke's Hospital on Monday and Wednesday evenings, beginning April 11.

Base Hospital for Columbus.—At a meeting of the directors of the Columbus (Ohio) Red Cross Chapter and the Chamber of Commerce, March 28, steps were taken to organize a base hospital unit for Columbus. The instruction work is in the hands of Dr. Charles S. Means, who is assisted by Drs. John W. Means, Edwin A. Hamilton and Florus F. Lawrence.

Johns Hopkins Hospital Plans Move to United States Service.—The Johns Hopkins Hospital is planning to eliminate all employees, physicians or others, who are not in sympathy with the government. No such cases have yet come to the attention of the management. All the physicians of the hospital have volunteered their services in the field if necessary.

Shortage of Medical Men in England.—The Earl of Derby, in moving for a second reading of the bill to review military exemptions, said "We have lost more than 400 doctors, killed or wounded, in the battle of the Somme alone, and at the present, we are, I won't say critically, but lamentably, short of medical men and I am afraid we will continue so in the immediate future."

Bill to Require Military Training.—A bill was introduced in the Pennsylvania Senate, April 3, by Senator Crow of Fayette County, amending the act regulating and licensing practitioners of medicine in Pennsylvania, so as to provide that before an applicant be licensed to practice he shall "have received an approved three months' field course and service in military training."

Surgical Unit in California.—The first surgical unit offered to the government by California is that of San Bernardino. The unit is formed under the Red Cross Society, and is commanded by Dr. Henry W. Mills, assisted by Drs. Thomas R. McHugh, David C. Strong and Claude H. Lashlee, together with seven nurses, two orderlies and a secretary-stenographer.

Hospital Ships Sunk.—The British hospital ship *Salta* is said to have been sunk by a mine in the English Channel, April 10, and fifty-two persons were drowned.——The British hospital ship *Gloucester Castle* was torpedoed, it is said, without warning in the English Channel, March 30. Since the beginning of the war, six hospital ships of the allies have been destroyed by torpedoes or mines, with a loss of 247 lives.

Services of State Health Board Offered Government.—At a meeting of the Kentucky State Board of Health in Louisville, April 2, the board offered its personal equipment and the active services of its trained health officers to the president, and assured him of the readiness of as many physicians as may be assigned to the quota of the state to serve in whatever capacity thought necessary within the country or over-seas.

New York Physicians Volunteer.—At a meeting held at police headquarters, April 6, presided over by Chief Surgeon Edward T. Higgins of the police department, about 150 physicians volunteered to offer professional services under the direction of the police department. An organization by boroughs was appointed and a committee was appointed to serve with Dr. Higgins in obtaining the necessary equipment for the service.

Ohio Assignments.—Lieut.-Col. Joseph A. Hall, chief surgeon of the Ohio National Guard, announced, April 7, the following appointments in his department: Major Charles E. Neal, M. C., assigned adjutant to the chief surgeon; Capt. James M. Bentley, M. C., relieved from duty with the First Field Hospital, and assigned to cavalry; Capt. John D. Spelman, M. C., relieved from duty with the First Field Hospital, and assigned to the First Infantry.

Military Instruction in Milwaukee.—Under the authority of the adjutant general, Major Gilbert E. Seaman, chief surgeon, Wis. N. G., has established a school of instruction in military medical surgery and hygiene for medical officers and noncommissioned officers of the sanitary troops. The sessions are being held at the headquarters of the Field Hospital, Goldsmith Building, Milwaukee, on Tuesdays and Thursdays at 4 p. m., and began April 10.

New York Broad Street Hospital for War Service.—The board of governors of the Broad Street Hospital, New York City, which is in process of construction, has offered it to the government, together with the services of a medical and surgical staff. A fund of $200,000 is to be raised to equip the building and make changes in the original plans. Barber and Company have made an addition contribution of $50,000 to further these plans, and Mrs. James Barber has contributed a motor ambulance.

Kenosha County (Wisconsin) Society Acts.—The Wisconsin State Medical Society has appointed the following as a Kenosha County Committee on Medical Preparedness: George F. Adams, chairman; J. F. Hastings, secretary; P. P. M. Jorgensen, G. Windesheim, J. H. Holm, J. H. Cleary and W. J. Hanley. This committee has held two meetings. A tentative working plan has been outlined and is to be submitted to the physicians of Kenosha County. Another meeting is to be held April 19.

Health Lessons of War.—Sir Alfred Keogh, surgeon-general of the British army, in a recent interview revealed the close cooperation between the American and British medical services, and stated that he had given and is still giving the medical men of the army the benefit of the English experience in keeping healthy its enormous army. The first essential for an efficient army is that it be well fed, the second that it be kept free from epidemics, and the third that great care shall be exercised as regards rural sanitation.

Western Reserve Lectures on Military Sanitation.—A series of eight lectures on "Military Medicine and Sanitation" is being given by Major Harry L. Gilchrist, M. C., U. S. Army, at the School of Medicine of Western Reserve University, Cleveland, on Tuesdays at 4:30 p. m. The series commenced April 10, and includes "Organization of the Sanitary Service," "Military Hygiene and Sanitation," "The Recruit," "Camp Sanitation," "Hygiene of Mobile Troops," "Water Supply of the Army," "Military Medicine," and "Military Surgery."

Shortage of Physicians.—There is an alarming shortage of physicians in New Zealand on account of the war. In a report made by the chief health officer to the minister for public health it is shown that instead of one medical man for every 2,000 of population, there is one physician for every 2,380 of population. In the four medical districts of the colony there are in practice 546 medical men; 190 are on active service and forty-seven are employed at various military camps or as examining officers on the Military Medical Board.

Baltimore Physicians Prepare.—At a meeting of the Baltimore City Medical Society, March 30, action was taken on the resolution drawn up by the Maryland Committee on Preparedness and endorsed by the council of the State Medical Society. Major Robert E. Noble read a paper on "What Doctors the Government Needs and How It Will Use Them in Peace or War." Dr. William H. Welch, Baltimore, discussed "The Medical Profession and Preparedness," and Dr. Gordon Wilson spoke on "What Doctors of Baltimore Can and Should Do."

Educational Facilities for British Prisoners of War.—The *Lancet* states that the Conference of Examining Bodies has voted to recognize work done and examinations passed in the camps of prisoners of war. It is believed that this step will prove a great encouragement to the men to use wisely the time of their captivity, and of material assistance to them on their return home. News of this arrangement is to be sent as soon as possible to the various internment camps in enemy and neutral countries, and it is suggested to friends and relatives writing to the prisoners of war to inform them of the matter.

Ambulance Corps Notes.—Fifty students at the Washington and Lee University, Lexington, Va., have organized a volunteer ambulance corps for service with the army.——The Jackson County (Mo.) Medical Society, Kansas City, has presented the Third Infantry, Mo. N. G., with a trailer for the ambulance, recently given to it by the Daughters of the Revolution. The cost of the trailer was $1,500, and it will accommodate four patients.——At a meeting of Chicago Lodge No. 4, B. P. O. E., it was voted to purchase two field ambulances to be sent to France for immediate service. The cost of the ambulance and equipment will be $3,200.

Offers Services to Soldiers' Families.—The Barton County (Kan.) Medical Association, at a meeting in Hoisington, April 9, agreed to endeavor to take care of and to keep intact the practice of any member of the society who may enter the medical service.——The Bay City (Mich.) Medical Society has offered to give its services free to families of all Bay City men who enlist in the army or National Guard.——Talbot County (Md.) Medical Society, at its meeting in Easton, April 6, adopted resolutions tendering professional services gratuitously to the members of families of those who are called to the colors.

Michigan State Society to Hold Special War Meeting.—A call has been issued for a special meeting of the house of delegates of the Michigan State Medical Society to convene in Battle Creek at 10 a. m. on Thursday, May 10. The call advises the members of the state society that Michigan should furnish 600 physicians for service in the army and the purpose of the meeting is to discuss and determine how best to meet the responsibility that has been placed on the medical profession of Michigan by reason of the declaration of war. Not only members of the house of delegates, but all members of the organization are asked to be in attendance at the general session planned. Prominent men of the profession and representatives from the army and navy medical departments will present the questions for discussion.

Navy Medical Corps Examinations.—The navy requires for its regular medical corps 300 physicians. Examinations for this branch will be given at the Naval Hospital. The navy is also enrolling a number of doctors for the Naval Coast Defense Reserve. This duty will require the service of the doctors only in the Fourth Naval District in and around Philadelphia in time of war only. If doctors are enrolled they can be given active duty at once, provided they personally apply to the commandant of the Navy Yard, Philadelphia, for this duty. All information relative to any medical branch of the service will be cheerfully given by Surg. Ralph W. Plummer, U. S. Navy, at the mayor's office, city hall. Any of the medical officers of the Naval Hospital or of the Navy Yard will also supply the desired information.

Hospitals Tendered Government.—Dr. Karoline S. R. Engelhardt, owner of the Lansdale Private Sanitarium, has offered the institution to the government for use in case of war.——The Memorial Hospital, Chicago, under the charge of Lieut. Francis Deacon, M. R. C., U. S. Army, has been offered to the War Department as a general hospital, and arrangements are being made for the organization of a base hospital unit.——The North Chicago Hospital has offered an independent unit to the government for use in case of war. Dr. Joseph C. Beck will be chief of staff of the unit and Dr. Clarence Loeb, assistant. The unit proposes to maintain two staffs, one at the front and the other in Chicago. A contribution of $10,000 toward the unit has been made by Mr. V. Mueller, president, and Mr. George Walrich, secretary of the Mueller Instrument Company.

Call for Service.—Only about 400 men in the Philadelphia Division have been enrolled in the Officers' Reserve Corps of the Army and many more are needed. Few of these are young enough for the first call into active service. The navy is in urgent need of medical reserves for immediate duty. Recruits cannot be examined the day they enlist, for there are now only about thirty physicians in the Coast Defense Reserve to examine them. The pay in either service amounts, with maintenance, to about $200 per month. Each medical volunteer can be assured that his practice will be cared for while he is away. A committee of the society headed by Dr. William W. Keen will be prepared to do this work and turn over the accounts for collection. Those wishing to join the Coast Defense Reserve of the Navy should call on Dr. Robert A. Bachmann at the United States Naval Hospital any day.

Pennsylvania National Guard Changes.—Majors Herbert A. Arnold, Ardmore, and William J. Crookston, Pittsburgh, have been commissioned lieutenant colonels in the Medical Corps of the National Guard, and Capt. George J. Swartz, Philadelphia, has been commissioned major.——Major James F. Edwards, Pittsburgh, and Lieuts. Edward K. Tullidge, Philadelphia, Albert A. Wagner, Pittsburgh, Walter C. Shaw, Ridgeway, Theodore L. Hazlett, Pittsburgh, and James W. Doughty, Philadelphia, have resigned and been honorably discharged from the state service.——Lieut. Leonard D. Frescoln, M. C., has been relieved from duty with the Thirteenth Infantry and assigned to duty with the First Infantry.——Major Allen W. Urmson, M. J., has, on his own request, been placed on the officers' reserve list.——Major Elmer E. Keiser, M. C., has, on his own request, been placed on the retired list.

Young Men Needed for Hospital Corps.—"I have read with interest your editorials and current comments on medical preparedness and the report of the General Medical Board and have acted accordingly. I have volunteered to become a member of the Medical Reserve Corps of the U. S. Army. Two young men also have been made interested in the Hospital Corps of the Navy and will enlist as hospital apprentices." This comes from Dr. John A. Koch, of Quincy, Ill. What Dr. Koch has done should be done by physicians all over the country. Both the Army and Navy need young laymen for the Hospital Corps. The Navy needs young men of a high class for enlistment in its Hospital Corps, and physicians should urge young men of their acquaintance who are high-school graduates and who think they would make good and reliable members of the Hospital Corps to enlist at the nearest naval recruiting station.

Government Sends Scientific Commission.—Six American scientists accredited to the American embassies in London and Paris are now on their way to England and France to cooperate with the scientific men of those countries in studying problems arising out of the war. They are sent by the Advisory Commission of the Council of National Defense and the National Research Council. Members of the party and the subjects which they will investigate are Dr. Joseph S. Ames, Johns Hopkins University, aeronautic conditions; Dr. Richard P. Strong, Harvard, camp sanitation; Dr. Linsley L. Williams, assistant health commissioner of New York, health; Dr. George A. Hulett, Princeton, chemistry of explosives; Dr. Harry Fielding Reid, Johns Hopkins, scientific map making and photography from aeroplanes; Dr. George K. Burgess of the federal bureau of standards, gun metals and rigid dirigibles. Early reports on the special subjects assigned will be made.

Treatment of Gas Asphyxia.—The treatment of soldiers who have been "gassed," by the method of Chassevant, is described in the *Lancet*, London, March 31. The hospital of which Chassevant was in charge, acting as an evacuation hospital, received the gassed soldiers from two to eight hours after being gassed. Some had already received first aid and others came direct from the trenches. All were subjected to the rhythmic inhalation of oxygen under pressure, at several sittings, with intervals between. Chassevant says oxygen given from a rubber bag after the usual method is of no efficacy; it is necessary to insufflate the oxygen on the lines of d'Arsonval's treatment of carbonic oxid intoxication. A rubber catheter is introduced far back in the buccal cavity, and is connected with a cylinder of compressed oxygen. By opening and shutting the regulator key active rhythmic insufflation at the rate of 15 or 16 to the minute is brought about. The effect is to calm the dyspnea, favor aeration of the lungs, and render unnecessary the patient's painful efforts at inspiration. To combat cardiac weakness camphorated oil in doses of from 5 to 15 c.c. or more in twenty-four hours is employed.

The Base Hospital.—One of the subjects particularly prominent at this time is the base hospital. Numerous physicians have affiliated themselves with the base hospital without a thorough understanding of what such service involves or of just what duties they will be called on to perform. Major T. S. Bratton of the Medical Corps a few years ago outlined the internal administration of the base hospital. ("The Internal Administration of a Base Hospital," T. S. Bratton, "Collected Papers, Field Service School for Medical Officers," Fort Leavenworth, Kan., 1914.) The functions of a base hospital are: "to receive patients from the field and evacuation hospitals as well as cases originating on the line of communications and at the base, and to give them definitive treatment." By definitive treatment is meant the final treatment, and its great importance is to prevent patients getting out of the control of the army authorities and back home where sympathetic friends, with false ideas of their duties to their country, will attempt to prevent the return of the patients to the army. This has been the case in past wars and is certainly an important problem. It becomes clear, then, that the base hospital is called into duty whenever active warfare ensues. And not till then.

Examination of Dentists for Army.—The surgeon-general of the army announces that examinations for the appointment in the Dental Corps of the Army will be held at Fort Slocum, New York; Columbus Barracks, Ohio; Jefferson Barracks, Mo.; Fort Logan, Colo., and Fort McDowell, Calif., May 7 and July 2. Application blanks and full information concerning these examinations can be procured by addressing the "Surgeon-General, U. S. Army, Washington, D. C." The essential requirements to securing an invitation are that the applicant shall be a citizen of the United States, shall be between 21 and 32 years of age, a graduate of a dental school legally authorized to confer the degree of "D.D.S." and shall be of good moral character and habits. Successful applicants will be immediately appointed (as far as the number of vacancies will permit) to the grade of first lieutenant, at an entrance salary of $2,000 per annum. In order to perfect all necessary arrangements for the examination, applications must be in the possession of the surgeon-general at least two weeks before the date of examination. Early attention is therefore enjoined on all intending applicants. There are at present fourteen vacancies and on July 1, 1917, there will be twenty-two additional vacancies.

Advancing Medical Students in Preparation for Mobilization.—To promote the condition of preparedness in the medical services in accordance with the request of the surgeons-general of the army and navy, the medical departments of university and other medical schools are considering the question of having a continuous session, omitting the usual summer vacation, so that students may be graduated sooner. Harvard has announced that arrangements have been made for instruction equivalent to that provided for fourth year students to be continued throughout the summer until the beginning of the regular academic year, September 24. This will permit students in good standing who register for the course by May 1 to complete their fourth year and come up for examination for the M.D. degree at mid-year. Certain other privileges with reference to obtaining the M.D., degree are to be permitted to men entering the medical service of the army or navy, according to the Harvard announcement. The faculty of the University of Louisville, Medical Department, has also taken action to begin, one week after the annual commencement this year, the regular schedule of lectures for all classes. The work will continue for eight months, at the conclusion of which time the next senior class will be graduated.

Utilization of Insane in Preparedness Movement.—The State Lunacy Commission has submitted the following plans to the State Board of Agriculture as a part of the preparedness movement: 1. The placing out system, whereby the commission would parole to carefully selected farmers as many able-bodied feebleminded patients as are able to do farm work. 2. The Emergency Squad.—A carefully selected group of patients who would be taken from the hospital in motor trucks to adjoining farms and there gather the crops, in case the farmer is unable to get sufficient labor. 3. Cooperative cultivation by which the planting of necessary crops, such as corn, potatoes, etc., would be undertaken. In addition it is suggested that land adjoining each hospital now lying idle be leased or bought and placed under cultivation by the institution. 4. That the state cultivate large tracts of waste land, placing thereon 100 or more patients under proper supervision to cultivate this land, the products to be used as directed by the State Board of Agriculture. In utilizing the labor of the patients in the institutions, only those well adapted to farm life would be selected, and every safeguard would be used to avoid accident. A special meeting of the superintendents and boards of managers was called for April 19 to study these propositions.

Requirements for the Nurse Corps.—Dr. L. G. Leland, Newton Falls, Ohio, writes: Will you please give me the minimum educational requirements for acceptance on the nursing force of the army? As similar letters are being received from others, we cite the following from the Act of Feb. 2, 1901, creating a nursing corps: All nurses in the Nursing Corps shall be appointed or removed by the surgeon-general, with the approval of the secretary of war; they shall be graduates of hospital training schools and shall have passed a satisfactory professional, moral, mental and physical examination. Applicants must be between 25 and 35 years of age and unmarried. The applicant must be not less than 60 inches and not more than 70 inches in height and must weigh not less than 100 pounds nor more than 195 pounds. The training school from which she shall have graduated must be one which gives a thorough professional education, both theoretical and practical. Residence of at least two years in an acceptable general hospital of 100 beds or more is required. Graduates of training schools connected with hospitals not meeting the above requirements may, on submitting proof of at least six months' experience in a large general hospital, be put on the eligible list if found otherwise qualified. The professional and mental examination of applicants is in writing, and is conducted by the superintendent. Reference should be made to the discussion of the Nurse Corps in a special article on the administration of the medical department, this issue, page 1180.

Some Practical Points from German Experience.—Some months ago, Col. Hans Daae, head of the Norwegian army medical service, made a general tour of inspection of the German army medical service to study changes which had occurred since the beginning of the war, and he gives his observations in Volume 1, 1917, of the *Norsk Tidsskrift for Militærmedicin.* Colonel Daae was impressed greatly by some of the marked changes in equipment which have resulted from changing conditions. Dressings in the depot for supplying the medical department were packed in squares stamped on both sides, and different colors were employed to distinguish between sterilized and nonsterilized dressings. As there is great need for metal, all cases containing metal have been discarded. Instruments formerly kept in metal cases are now wrapped in cloth which has been previously impregnated with paraffin. A special department is devoted to supplying new lenses for broken spectacles, and it is stated that about 500 application forms for such new lenses were received daily. Every article of copper, brass and nickel was withdrawn from the medical service and replaced by galvanized iron or papier mâché with apparently satisfactory results. It was found that the organization of the medical service in the field had to be thoroughly revised. Early in the war the infliction of a single casualty was the signal for a medical officer to be sent, and the service suffered great losses in the first months of the war. A similar mistake was made in establishing dressing stations before it was even comparatively safe to do so, that is, before the actual conflict had begun to quiet down. The casualties in the medical service assumed such alarming proportions that orders were issued that military surgeons should not be sent to such posts at the command of the nonmedical staff, but should themselves determine when their services should be given. Colonel Daae was struck by the important change in the status of the officers in the army medical service during the war. *They have been put on an equal footing with other officers in the field.*

References to Literature on Military Medicine.—Several inquiries have been received concerning the securing of literature on military medical service. The following books are recommended for consultation by those desiring to familiarize themselves with the work of the medical officers:

Manual for the Medical Department, 1916, Supt. of Documents, Government Printing Office, Washington, D. C., 60 cents.
Field Service Regulations, 1914, ibid., 60 cents.
Army Regulations, 1913, ibid., 60 cents.
Drill Regulations and Service Manual for Sanitary Troops, 1914, ibid., 50 cents.
Straub: Medical Service in Campaign, P. Blakiston's Son & Co., 1012 Walnut St., Philadelphia, $1.50.
Havard: Military Hygiene, William Wood & Co., 51 Fifth Ave., New York, $5.
Keefer: Military Hygiene and Sanitation, W. B. Saunders Co., W. Washington Sq., Philadelphia, $1.50.
Mason: Handbook for Hospital Corps, William Wood & Co., $4.
Ashburn: Military Hygiene, Houghton, Mifflin Company, Cambridge, Mass., $1.50.
Woodhull: Military Hygiene, John Wiley & Sons, 432 Fourth Ave., New York, $1.50.
Woodhull: Military Hygiene for Officers of the Line, John Wiley & Sons, 432 Fourth Ave., New York, $1.50.
Morrison and Munson: Study of Troop Leading and Management of the Sanitary Service in War, Cavalry Journal, Fort Leavenworth, Kan., $1.25.

In addition, reference should be made to the following articles on military subjects which have appeared in The Journal during the past three years:

Rejections and Enlistments in the Army, editorial, Jan. 31, 1914, p. 386.
Alcohol Barred from Navy, editorial, April 11, 1914, p. 1176.
Disease Dangers of Mexican Invasion, editorial, May 2, 1914, p. 1403.
Government Medical Services Ready, editorial, May 2, 1914, p. 1406.
The Medical Reserve Corps, editorial, May 2, 1914, p. 1407.
Mitchell, S. W.: The Medical Department in the Civil War, May 9, 1914, p. 1445.

Oman, C. M.: Medical and Surgical Work on a U. S. Battle-Ship, May 16, 1914, p. 1541.
Military Surgery in the Balkans, editorial, Aug. 1, 1914, p. 405.
The Army and Mental Disease, editorial, Oct. 17, 1914, p. 1396.
Health Conditions in the Navy, editorial, Dec. 12, 1914, p. 2139.
Hoguet, J. P.: Observations on Military Surgery in the Early Weeks of the War, Dec. 19, 1914, p. 2194.
Health in Our Army, editorial, Jan. 9, 1915, p. 155.
Military Surgery, Correspondence, Jan. 9, 1915, p. 167.
Current Aspects of Military Surgery, editorial, March 6, 1915, p. 832.
War Surgery, editorial, March 13, 1915, p. 912.
Alcohol in European Armies, editorial, May 15, 1915, p. 1663.
Jablons, B.: Pathology of War Surgery, June 19, 1915, p. 2045.
Preparedness, editorial, July 1, 1915, p. 42.
Drennen, W. E.: Experiences in Military Surgery, July 24, 1915, p. 296.
Straub, W.: Alcohol in European Armies, Correspondence, Aug. 21, 1915, p. 732.
What the Civilian Doctor Called to Active Service with the Army Should Know:
  1. Duties in the Zone of the Interior, Feb. 5, 1916, p. 425.
  2. Duties on the Line of Communications; Sanitary Measures in Camps, Feb. 12, 1916, p. 508.
  3. Duties in Zone of the Advance, Feb. 19, 1916, p. 571.

A reprint of this series will be sent on receipt of a stamped addressed envelope.

Medical Preparedness and the Army, editorial, Feb. 19, 1916, p. 575.
Increased Medical Staff in the Army, editorial, April 8, 1916, p. 1121.
The Army Medical Department and Preparedness, editorial, April 22, 1916, p. 1313.
The National Defense Bill and the Army Medical Service, editorial, June 10, 1916, p. 1859.
Disease Dangers of War with Mexico, editorial, June 24, 1916, p. 2070.
The Army Medical Service as a Career, editorial, July 1, 1916, p. 40.
Osgood, R. B.: Orthopedic Surgery in War Time, Aug. 5, 1916, p. 418.
Membership in Army Medical Corps as a Career, editorial, Oct. 28, 1916, p. 1308.
Medical Officers' Reserve Corps, editorial, Oct. 28, 1916, p. 1308.
Recent Legislation for the Medical Corps of the Navy, editorial, Nov. 11, 1916, p. 1452.
Chamberlain, W. P.: Care of Troops on the Mexican Border, Nov. 25, 1916, p. 1573.
Medical Progress in the Navy, editorial, Dec. 16, 1916, p. 1854.
Noble, R. E.: Medical Corps of Army as a Career, March 31, 1917, p. 955.
Holcomb, R. C.: The Navy and Its Relation to the Medical Profession in Time of War, April 14, 1917, p. 1095.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST; SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ALABAMA

Protest Against License Fee.—At a meeting of the Birmingham Commission, March 27, more than twenty-five physicians appeared to protest against the license schedule, which taxes each physician a minimum of $15 on a practice of $2,000. The commission suggested the appointment of a committee of three to frame an equitable schedule.

Personal.—The resignation of Capt. William T. Weissinger, *Uniontown*, M. C., Ala. N. G., was accepted, March 9.——Dr. William W. Dinsmore, Montgomery, assistant state health officer, has been appointed state prison inspector to succeed Dr. William H. Oates, term expired.——Dr. H. J. Lowrey has been appointed assistant health officer of Birmingham

CALIFORNIA

Measles Epidemic.—Measles is reported to be more prevalent in California than in any other period in its history. More than 8,500 cases were reported during the first three months of this year.

Medical Boards Bill Killed in Committee.—The bill introduced by Senator Edgar Luce, which seeks to combine the five state medical boards now in existence, was tabled by the Senate Public Health and Quarantine Committee at its session, March 20.

Smallpox on Steamer.—The steamer *Rose City* of the San Francisco and Portland Steamship Company reached San Francisco, March 20, with a case of smallpox on board. The patient was removed to the Isolation Hospital, the vessel was quarantined and the passengers, after being vaccinated, were allowed to land.

Personal.—A complimentary farewell was tendered Dr. Jacob C. Geiger, chief bacteriologist of the State Hygienic Laboratory, Oakland, and assistant director of the Bureau of Communicable Diseases, of the State Board of Health. Dr. Geiger entered the United States Public Health Service, April 15, and has been ordered to duty in malarial prevention work in New Orleans.

Physicians' Building Reconstructed.—The Physicians' Building, Sacramento, is undergoing reconstruction. The remodeled building will be five stories in height and will be thoroughly equipped for the use of physicians and dentists.——A new building, representing an investment of $350,000, to be devoted exclusively to the use of physicians and dentists is to be erected at Grand Avenue and Webster Street, Oakland. The structure will be seven or ten stories in height, and of steel and pressed brick construction.

Drugless Healers Ask Injunction.—L. E. Nickell and Robert J. Burke, drugless healers and ordained ministers of the Church of the Spiritual Temple of Truth, Los Angeles, have applied for an injunction to prevent the enforcement of the state law requiring medical examinations for all persons practicing healing. The appeal attacks the state medical law as unconstitutional and class legislation, and as depriving the petitioners of their right to make a living, a license to practice medicine being denied them.

Donations Toward University Hospital.—At the charter day exercises of the University of California, March 23, Pres. Benjamin Ide Wheeler announced that $43,493 has been given by various friends of the university to furnish and equip the new University Hospital in San Francisco, a 215-bed teaching hospital, itself built through gifts of $586,000 from a number of different benefactors. The donors of the equipment fund are: Wallace M. Alexander, $2,000; an alumnus of the university, $10,000; F. W. Bradley, $5,000; William H. Crocker, $2,616.50; the children of Regent F. W. Dohrmann, $500; D. C. Jackling, $1,000; Charles W. Merrill, $1,000; Mrs. James Moffitt, $15,000; N. Ohlandt, $1,500; a friend, $2,377; a friend, $2,500.

Summer Graduate Course.—Stanford University Medical School announces its fourth summer graduate medical course, which will extend from July 9 to August 17. Classes will be held in the Medical School Building, Sacramento and Webster streets; the Lane Hospital, at Clay and Webster streets; San Francisco Hospital, at Twenty-Second Street and Potrero Avenue, and the Isolation Hospital at Army and DeHaro streets. The course of instruction will include clinical medicine, roentgenography and Roentgen therapy, cutaneous medicine, syphilis, pediatrics, clinical surgery, anatomy, orthopedic surgery, genito-urinary surgery, clinical ophthalmology, otology and laryngology, practical obstetrics, gynecology, cystoscopy, anesthesia and pathology. As many courses as desired may be taken, the total maximum fee being $150. All correspondence regarding this course should be addressed to the dean of the school.

ILLINOIS

Contract for Hospital Awarded.—A contract for the erection of the first unit of the Illinois Valley Hospital, Ottawa, has been awarded. The new building will cost about $30,000 and will be known as the Diagnostic Pavilion. It will be one story in height and of masonry construction with high basement.

Talks Before Medical Society.—At the quarterly meeting of the Warren County Medical Society, held in Monmouth, April 15, Dr. Kellogg Speed, Chicago, delivered an address on "Military Surgery," illustrated by stereopticon views, and Dr. Wilber E. Post, Chicago, spoke on "The Use of Salts and Alkali in Nephritis."——Dr. Charles P. Emerson, Indianapolis, dean of the Indiana University School of Medicine, delivered an address, April 13, on "Modern Medicine and the School Child," before the Illinois State Teachers' Association.

Personal.—Dr. Leon W. Kelso, Paxton, has been appointed local surgeon for the Illinois Central Railroad, succeeding Dr. Spencer S. Fuller, resigned.——Dr. Robert W. Allen, Donnellson, underwent operation at the Hillsboro Hospital, April 4, and is reported to be doing well.——Dr. John W. Earel, Quincy, who is expected to resume practice after an absence of nearly a year on account of illness, has had a relapse and may not be able to return to work for two or three months.

State Society Meeting.—The annual meeting of the Illinois State Medical Society will be held in Bloomington, May 7 to 10. All business sessions will be held in the Masonic Temple. On the Sunday preceding the meeting, which will be known as Health Sunday, the pulpits in the various churches will be filled by visiting physicians. In addition to the sectional meetings, there will be a public mass meeting at the Second Presbyterian Church on Sunday evening when addresses will be given by Drs. William L. Noble, president of the society, John Dill Robertson, and William A. Evans, all of Chicago. On Monday evening a public meeting will be held at the high school auditorium at which addresses will be given by Dr. Joseph C. Beck, Chicago, on "Prevention of Blindness" and by Dr. Richard J. Tivnen, also of Chicago, on "The Prevention of Deafness."

Chicago

Ancient Medicine.—The next meeting of the Society of Medical History of Chicago will be held at the Hotel Sherman, April 27, when Prof. Morris Jastrow, Philadelphia, will deliver an illustrated lecture on "The Medicine of the Babylonians and Assyrians."

Oral Surgery or Dentistry.—On April 12 a case of great importance to the profession was concluded before Judge Olson, chief justice of the Municipal Court. The Dental Board of Illinois caused the arrest of Dr. William A. Lurie on the charge of practicing dentistry without a license. The attorney-general contended that a physician has no right to treat diseases of the jaw under the provision of the dentistry act. After a partial hearing of the case of the state, the judge indicated that the prosecution which arose from the treatment by Dr. Lurie of a case of antrum and jaw infection could not be sustained, and the state thereupon nonsuited. Dr. Lurie was represented by Attorney Robert J. Folonie, acting for the Chicago Medical Society and the Illinois State Medical Society.

KANSAS

Hospital Association to Meet.—The annual meeting of the Kansas Hospital Association will be held in Salina, May 1, under the presidency of Dr. Samuel Murdock, Jr., Sabetha.

Speed at Topeka.—Dr. Kellogg Speed, Chicago, who has recently returned from the western war front in France, delivered an address before the Shawnee County Medical Society, at Topeka, April 2.

MAINE

Department of Health Created.—The Maine legislature, prior to its adjournment, April 7, enacted a law creating a state department of health and providing a health commissioner with a visiting council appointed by the governor, and a council commissioner for a term of six years, removable for cause only. The commissioner is empowered to appoint three or more district commissioners, responsible to, and paid by, him.——The bill creating a board for the registration of osteopaths failed to pass.

MARYLAND

Sexton Transfers.—Dr. Lewis A. Sexton, Baltimore, for several years chief of the dispensary clinic of Johns Hopkins Hospital, has resigned to accept the position of superintendent of the Hartford (Conn.) Hospital.

NEW JERSEY

Memorial Tablet Erected.—In memory of the late Dr. Henry G. Taylor, for twenty-six years visiting physician to the Cooper Hospital, Camden, a tablet has been placed in the central corridor of the main building of the institution.

Personal.—Dr. Daniel J. Donohue, Jersey City, sustained a fracture of the skull and other injuries when the steering gear of his car broke, while he was answering an emergency call, March 30.——Dr. Thomas B. Lee, Camden, has been appointed a member of the state board of health.

NEW YORK

New Queens Hospital.—The Queensborough General Hospital has been organized to take over the Jamaica Hospital. Option on a site just north of Jamaica has been secured, and a campaign to raise $250,000 has been started. Tentative plans provide for a building with 200 rooms on a plot large enough to permit of the construction of additional wings as required.

State Medical Society Meeting.—The annual meeting of the Medical Society of the State of New York will be held in Utica, April 24 to 27, with headquarters at the State Armory, Rutgar and Struben streets. Section meeting places are at the New Century Auditorium, Cope Memorial Church, Park Baptist Church, Park Baptist Chapter, and two sections will meet in the parlors at the Armory.

Personal.—Major H. Judson Lipes, Albany, Capt. Henry B. Gillen, Cohoes, and Eugene F. Connally, Troy, all assigned to the Second Infantry, have resigned from the Medical Corps. ——Lieut. Homer H. Oaksford, Gloversville, has been commissioned Major, M. C., N. Y. N. G., and assigned Second Infantry.——Dr. George H. Houghton, Albany, has been transferred to the Second Infantry.——Dr. Samuel A. Munford, Ithaca, has resigned as medical advisor of Cornell University to accept a position in the Clifton Springs Sanitarium.

New York City

Many Years a Typhoid Carrier.—The New York Health Department reports a typhoid carrier just discovered, a woman, 76 years of age, who had typhoid fever forty-nine years ago.

The Work of the Bacteriologic Laboratory.—During the past year there were submitted to the Municipal Bacteriologic Laboratory 215,341 cultures for contagious diseases, and each of the four bacteriologists averaged 141 tests a day, including Sundays and holidays.

Gift of Milk for Schoolchildren.—The Clover Farms, Inc., and the Sheffield Farms-Slawson-Decker Company have donated to the Bureau of Child Hygiene 500 books of 30-quart coupons each. These books will be distributed to schoolchildren needing additional nourishment.

Dentist to Care for Teeth of Tuberculous Children.—The Jewish Aid Society of Brooklyn has arranged for dental work for the child patients of the Tuberculosis Day Camp at Rutherford. Patients whose sputum contains tubercle bacilli are to be treated separately and not in a public dental clinic.

Health Survey of Chelsea District.—The Chelsea Neighborhood Association, in cooperation with the Metropolitan Life Insurance Company, has undertaken a survey of the district from Fourteenth to Forty-Second streets, and from Fifth Avenue to the Hudson River, including a population of about 180,000 people. The census is to be taken the end of April.

Mosquito and Fly Week.—Members of the Interstate Mosquito Committee met recently under the chairmanship of Dr. Haven Emerson in order to discuss plans for fighting mosquitoes and flies this summer. It was decided to hold a mosquito and fly week, beginning May 28, during which an education campaign will be conducted against the mosquito and the fly.

Oral Hygiene Week.—The health department, the department of education and the First and Second District Dental societies have inaugurated a city-wide educational campaign on oral hygiene during the week of May 13. A large part of the work will be carried on in schools, the dental societies having agreed to furnish a lecturer for every school in the city. In addition prizes will be given for posters, for a slogan, and for the best set of teeth in each school.

Examination for Pathologist.—The Municipal Civil Service Commission announces that it will receive applications from April 11 to April 25 for the position of pathologist. The examination will be competitive and open to all citizens of the United States. Candidates must be graduates in medicine from approved institutions, at least 21 years of age, and must pass the required examination. The compensation rates proposed by the board for this position range from $1,740 to $2,100.

Instruction for Mosquito Fighters.—The Brooklyn Institute of Arts and Sciences announces a course of instruction designed to train persons for practical work in the elimination of mosquitoes and flies. The course is to be given at the Biological Laboratory, Cold Harbor Springs, L. I., beginning July 5, and continuing six weeks. The course includes surveys and mapping, identification of species, life history of the different species of mosquitoes and flies, and specifications for treatment and elimination. Further information regarding this course may be had by addressing Dr. Charles B. Davenport, Cold Harbor Springs, L. I., N. Y.

Medical Consultant Wanted for Law Department.—The Municipal Civil Service Commission announces that applications will be received up to 4 p. m., April 24, for the position of medical consultant, law department. A qualifying physical examination will be given; candidates must have had ten years' general practice of medicine, or five years' general practice of medicine and five years of hospital operating work. They must have had extended experience in physical examination of a nature tending to qualify them for the duties of the position. The duties of the position are to act when required as medical consultant to the corporation council, namely in connection with claims and actions against the city for damages for personal injuries. Applicants must be at least 35 years of age. The compensation is $6,000 annually, and full time service is not required.

OHIO

Physicians to Fill Pulpits.—On Sunday, May 13, preceding the opening of the annual session of the Ohio State Medical Association at Springfield, the pulpits of that city will be filled by out-of-town physicians, who will deliver addresses on subjects connected with public health.

Eugenic Marriage Bill Passes Senate.—The Ohio State Senate, March 22, passed a bill requiring male applicants for marriage licenses to undergo a physical examination and present a certificate of good health, and providing that divorced men cannot remarry within six months after divorce.

Personal.—Dr. William Pennell, Mount Vernon, is critically ill at Bethesda Hospital, Cincinnati.——Dr. Henry Houton, formerly of Upper Arlington, dean of the Harvard School in China, has arrived in San Francisco, from Shanghai.——Dr. Morton W. Bland, Bellevue, state registrar of vital statistics, has resigned.

Cancer Campaign.—The cancer committee of the Ohio State Medical Society has arranged with the *Ohio State Medical Journal* to devote the May number to cancer problems. These problems will be discussed at the meeting of the Ohio State Medical Association at Springfield, in May. An educational campaign will also be inaugurated among physicians, nurses and the public.

PENNSYLVANIA

Philadelphia

Personal.—Dr. Edward T. Reichert, professor of physiology at the University of Pennsylvania, has offered to the government his 50-foot sea-going yacht *Fortuna 3rd.*

Rose Cold and Hay-Fever Dispensary.—The Samaritan Hospital has opened a dispensary for the diagnosis and treatment of persons suffering with rose cold and hay-fever under the department of Dr. William Egbert Robertson. The dispensary work will be in charge of Dr. Claude P. Brown, Glen Olden, and the dispensary hour will be Tuesday, 7:30 to 8:30 p. m., beginning April 17.

Obstetric Fellowship Established.—The Women's Medical College of Pennsylvania, Philadelphia, has established an obstetric fellowship amounting to $1,000, to be awarded annually to any medical woman of especial ability who, following the undergraduate course, has completed at least one year of hospital service, including work in the maternity wards, and one year of further practice. The amount is to cover twelve months of special work as fellow in obstetrics, with the condition that the holder of the fellowship shall thereafter continue the practice of this specialty.

Pupils Aid in War on Flies.—Dr. John P. Garber, superintendent of public schools, and Dr. Walter S. Cornell, director of school medical inspection, have given their support to the Cooperative Committee for Fly Extermination in its efforts against the house fly. Letters signed by both Dr. Garber and Dr. Cornell are being distributed through the public schools directing the work, and a call has been issued for volunteer inspectors who will hunt for breeding places of the insect and direct the proper disinfection. Letters sent out last week containing circulars directing the extermination of the fly brought many replies not only from superintendents of hospitals but from hotel managers, restaurant and boarding house proprietors, all endorsing the movement and promising the fullest cooperation.

TENNESSEE

Personal.—Dr. Louis Frank, Louisville, Ky., spoke before the Memphis and Shelby County Medical Society, at its meeting, March 20, on "Safety Factors in Prostatic Surgery." The address was illustrated by lantern slides.——Dr. Arthur G. Kelley, Memphis, has moved to New York.

Cornerstone Laid.—The cornerstone of the new anatomic hall at Meharry College, Nashville, was laid, March 23. The president of the college, Dr. George W. Hubbard, was master of ceremonies, and the principal address was delivered by Bishop Frank M. Bristol of the Methodist Episcopal Church. The new building will be completed in time for use in the term which opens in the autumn.

County Society Regulates Hospital.—The Memphis-Shelby County Medical Society early in March adopted resolutions for the regulation of hospitals in Memphis, demanding that each hospital appoint a board of medical advisers; that it maintain an efficient method of filing and indexing histories; that it require each member of its attending staff to leave in the hospital a record of each case, and that it require all physicians sending patients to or operating on them in the hospital to live up to the professional requirements of the society. It also demanded that each hospital create a laboratory fund from the fees paid for laboratory examinations of all kinds at a rate to be determined by the hospital and the pathologist, such fund to be expended only on the laboratory; that there should be in each laboratory a full time technician, and that each intern be required to serve at least two months in the laboratory. In accordance with this action, St. Joseph's Hospital has notified the local members of the profession that all pay patients will be charged an additional $2 on admission for laboratory examinations, and that all tissue removed at operation is the property of the hospital, and will form a part of the operation record, but that charity patients will receive any laboratory services which may be necessary.

State Society Meeting.—The eighty-fourth annual meeting of the Tennessee State Medical Association was held in Nashville, April 3 to 5, under the presidency of Dr. Charles N. Cowden, Nashville. The following officers were elected: president, Dr. Edward T. Newell, Chattanooga; vice presidents, for Eastern Tennessee, Dr. Henry M. Cass, Johnson City; for Middle Tennessee, Dr. Thomas G. Pollard, Nashville, and for Western Tennessee, Dr. William O. Sullivan, Newbern; treasurer, Dr. Joseph F. H. Gallagher, Nashville (reelected); secretary, Dr. Olin West, Nashville (reelected); delegate to the American Medical Association, Dr. Andrew F. Richards, Sparta; alternate, Dr. William Britt Burns, Memphis, and councilors, Drs. Samuel R. Miller, Knoxville, Zeb L. Shipley, Cookeville; William C. Dixon, Nashville; Alexander B. Dancy, Jackson, and William T. Black, Memphis.——The section on ophthalmology and oto-laryngology at its final session elected Dr. Richmond McKinney, Memphis, president, and Dr. William W. Potter, Knoxville, secretary.——At the annual banquet of the association, April 4, Dr. John A. Witherspoon, Nashville, made an eloquent appeal to the association to support the government in the present war crisis, and resolutions were adopted pledging the service of the members to the United States in case of war.

UTAH

State Medical Board Organized.—The new State Medical Board met at Salt Lake City, April 7, and organized, electing Dr. David C. Budge, Logan, president; Dr. Fred W. Taylor, Provo, vice president; Dr. Walter M. Stookey, Salt Lake City, secretary-treasurer, and Dr. George F. Harding, corresponding secretary. The two new members of the board are Drs. Harry N. Mayo, Salt Lake City, and John R. A. Whitlock, Tremonton.

New Staff Begins Work.—The new staff of the Salt Lake County Hospital for the quarter beginning April 1 is as follows: surgery, Dr. George W. Middleton; orthopedic surgery, Dr. Samuel C. Baldwin; internal medicine, Dr. William H. Rothwell, Murray; diseases of the eye, ear and throat, Dr. Leslie W. Snow; diseases of children, Dr. Charles E. Carter; diseases of the kidney and bladder, Dr. Francis A. Goeltz; diseases of the skin, Dr. William L. Rich, and pathology, Dr. George F. Roberts.

VIRGINIA

Faculty Changes.—At the meeting of the faculty of the Medical College of Virginia, Richmond, March 28, Dr. Hugh M. Taylor resigned as professor of clinical surgery and was elected emeritus professor; Dr. William L. Peple was elected professor of clinical surgery; Dr. L. Schuyler B. Moon, acting professor of pathology, was elected professor of pathology, and Dr. Edgar C. L. Miller was reelected professor of bacteriology and physiologic chemistry.

Personal.—Dr. Robert J. Payne, Fredericksburg, has been appointed a member of the board of visitors of the Medical College of Virginia, Richmond, succeeding Dr. Joseph N. Barney, who resigned to accept an appointment in the Medical Reserve Corps, U. S. Army.——Dr. Stuart McGuire, Richmond, has been appointed a member of the board of visitors of the Medical College of Virginia, Richmond, succeeding Dr. Robert C. Randolph, resigned.——Dr. Ernest C. Levy has resigned as chief health officer of Richmond to accept a position with the North Public Health Bureau, New York.——Dr. Roy K. Flannagan, Richmond, has been appointed city health officer of Richmond.——Dr. B. Lawrence Taliferro, Catawba

Sanatorium, has been appointed medical director of the Piedmont Sanatorium.

Hospital News.—The people of Abingdon will erect a hospital as a monument to the late Dr. George Ben Johnston, Richmond, to be known as the George Ben Johnston Memorial Hospital. In an eight-day campaign to raise funds for this purpose, $30,000 was subscribed.——The Chesapeake and Ohio Railway Company has opened a new hospital at Clifton Forge. The building cost $70,000, and is under the charge of Dr. Benjamin B. Wheeler.——More than $112,000 of the $150,000 required for the building fund for the Retreat for the Sick, Richmond, had already been subscribed, April 1.——Mrs. Henry B. Gilpin of Baltimore and Scaleby Manor, Clarke County, will erect and equip, at an expense of $10,000, a large children's department at the Winchester Memorial Hospital.

WASHINGTON

Personal.—Dr. William A. Shannon, Seattle, has been reappointed a member of the board of regents of the University of Washington for a six-year term.——Dr. John B. Anderson has been reelected city health officer of Spokane.——In the damage suit brought by Dr. L. Maud Parker, Seattle, against the Northwest Motor Company for injuries alleged to have resulted from an automobile collision in October, 1915, and for which $51,000 was claimed, the jury brought in a verdict for the defendant, April 6.

Graduate Medical Course.—A graduate medical course will be conducted at the new St. Luke's Hospital, Spokane, during the summer. Among those who have announced their acceptance of positions as instructors are: Drs. W. T. Councilman, Harvey Cushing, Walter B. Cannon, Fritz B. Talbot, James S. Stone, George Holmes, David L. Edsall and Francis W. Peabody, Boston; William G. MacCallum and Warfield T. Longcope, New York; Lewellys F. Barker and Theodore C. Janeway, Baltimore, and Rollin T. Woodyatt, Ludvig Hektoen and Harry G. Wells, Chicago.

CANADA

First Aid for Injured Workmen.—An amendment to the Workmen's Compensation Act of Ontario provides for first aid to injured workmen. This will continue for thirty days after the injury. No specific amount is named, but it will be paid out of the accident fund.

Personal.—Surg.-Gen. Guy Carleton Jones, Ottawa, Ont., has arrived in Halifax.——Gen. John T. Fotheringham, C. M. G., Toronto, has been invited to deliver the Cavendish address before the London Medico-Chirurgical Society in June.——Major E. Stanley Ryerson, Toronto, who was with the University of Toronto Base Hospital at Saloniki, but who returned to Toronto a short time ago, has been appointed A. D. M. S., Toronto Military District, in succession to Col. Frederick W. Marlow, resigned. Major Ryerson will have the temporary rank of lieutenant-colonel.——Capt. James G. Bruce of the C. A. M. C. has recently returned to Toronto on furlough.

GENERAL

Pediatrists to Meet.—The American Pediatric Society will hold its twenty-ninth annual meeting at the Greenbrier, White Sulphur Springs, W. Va., May 28 to 30, under the presidency of Dr. Frank S. Churchill, Chicago.

Confederate Surgeons to Meet.—The twentieth annual meeting of the Association of Medical Officers of the Army and Navy of the Confederate States will be held in the New Willard Hotel, Washington, June 4 to 8. The meeting will be held concurrently with the general reunion of the United Confederate Veterans.

Alienists and Neurologists to Meet.—The annual meeting of alienists and neurologists will be held, July 9 to 12, in the Red Room of the Hotel LaSalle, under the auspices of the Chicago Medical Society. Dr. George A. Zeller, Springfield, Ill., will act as chairman, and Dr. Bayard Holmes, Chicago, as secretary of the meeting.

Immunologists Elect Officers.—At the annual meeting of the American Association of Immunologists, held in New York, April 6 and 7, Dr. John A. Kolmer, Philadelphia, was elected president; Dr. Martin J. Synnott, Montclair, N. J., secretary, and Dr. Willard J. Stone, Toledo, Ohio, treasurer. The new council is composed of the officers and Drs. Richard Weil, Arthur F. Coca, and William H. Park, New York, and Dr. A. Parker Hitchens, Glen Olden, Pa. The next meeting will be held in Minneapolis in April, 1918.

State Health Officers to Meet in Washington.—The annual conference of state health officers with the surgeon-general of the United States Public Health Service has been called to meet in Washington, D. C., April 30 and May 1. Immediately following the adjournment of this official conference, the Conference of State and Provincial Boards of Health of North America will meet and remain in session two days. In the latter body various Canadian provinces are represented, and are expected to have their health officers present. The leading topic before both conferences will be the coordination of existing federal, state and city health agencies with particular reference to increased efficiency during the war.

Conference of Charities and Correction.—The forty-fourth annual National Conference of Charities and Correction will be held at Pittsburgh, June 6 to 13, under the presidency of Frederick Almy, Buffalo. The conference sessions will include a general open meeting at which the presidential address will be delivered; a religious service on Sunday at which the annual sermon will be preached by Bishop Williams of Michigan, and on Saturday the general business session of the conference will be held. The work of the conference will be under the following general divisions: children, community programs, correction, the family and the community, health, mental hygiene, public charities, rural social problems and social insurance.

McIntire Prizes.—The American Academy of Medicine, in appreciative commemoration of the work of Dr. Charles McIntire, Easton, Pa., secretary of the academy for twenty-five years, announces that it will give two prizes to be awarded at the annual meetings in 1918 and 1921, respectively. The subject for 1918 is "The Principles Governing the Physicians' Compensation in the Various Forms of Social Insurance." The committee to award this prize is composed of Drs. John L. Heffron of the Syracuse (N. Y.) College of Medicine; Reuben Peterson of the University of Michigan, Ann Arbor, and John Staige Davis of the University of Virginia, Charlottesville. The subject for 1921 is "What Effect has Child Labor on the Growth of the Body," and the committee to award this prize is composed of Drs. Thomas S. Arbuthnot, University of Pittsburgh; Winfield Scott Hall of Northwestern University, Chicago, and James C. Wilson of Jefferson Medical College, Philadelphia.

The Statistics of Blindness.—The forthcoming report from the Bureau of the Census on blindness in the United States indicates that 30.8 per cent. of the blind population lost their sight when less than 20 years of age; 7.4 per cent. during the early and middle years of adult life (from 20 to 64 years); and 21.8 per cent. after passing 65 years of age. The greatest loss of sight, by periods of five years, occurred in the first period of life. These figures are based on information from 29,242 blind persons of the 57,272 to whom schedules were sent by the census bureau. There has been a marked decrease since 1880 in the proportion of blind who lose their sight in infancy. This decrease is to be explained in great measure by the increased use of the Credé method of prophylaxis for ophthalmia neonatorum. The proportion of blind who lost their sight during the early or middle years of adult life has increased since 1880 and this increase is probably due in part to the great industrial growth of the United States during the last thirty years, with its natural increase in blindness due to occupational injuries and diseases.

Interstate Quarantine Regulations to Cover Construction Camps and the Oyster Industry.—By an amendment to the interstate quarantine regulations, recently promulgated by the secretary of the treasury, persons maintaining camps for migratory workers are required to keep such camps in a proper sanitary condition, to take measures to keep such camps free from vermin, and to exercise such other precautions as may be necessary to prevent the interstate spread of disease. The surgeon-general of the United States Public Health Service is authorized to make such inspections as may be necessary. Common carriers are forbidden to accept oysters, clams, or other shellfish which have been grown, fattened, or handled in such a way as to be agents in the spread of disease. The surgeon-general of the United States Public Health Service is directed to inspect beds used for growing or fattening oysters, clams, or other shellfish, and shucking houses and similar places where they are prepared for shipment, and to forbid their shipment if they are produced or handled so as to be agents for the spread of disease.

Civil Service Examinations.—The United States Civil Service Commission announces an open competitive examination for assistant curator, division of medicine (male), to be held

May 2, to fill a vacancy in the National Museum, Washington, D. C., at a salary ranging from $1,500 to $1,800 a year, and future similar vacancies. The duties of the position include the identification, classification and labeling of specimens exemplifying the history of medicine, materia medica, pharmacy and public hygiene, and the planning and installing of exhibits illustrating these groups. Competitors will be examined in botany, materia medica, pharmaceutical chemistry and history of medicine. Applicants must be less than 40 years of age, must be graduates of a school of medicine or pharmacy, and should apply for Form 1312, stating the title of the examination desired, to the Civil Service Commission, Washington, D. C., or to the secretary of any United States Civil Service Board. A second examination is for medical intern, St. Elizabeth's Hospital, Washington, D. C., to be held June 6, 1917. This examination will be for both men and women, to fill a vacancy at $900 a year with maintenance. For the existing vacancy males are eligible. Applicants must be graduates of reputable medical colleges or senior students in such institutions, must be unmarried and 20 years of age or over. Applicants should apply for Form 1312, stating the title of the examination to the Civil Service Commission, Washington, D. C., or the secretary of any United States Civil Service Board.

FOREIGN

Bubonic Plague in England.—News of the appearance of bubonic plague at Liverpool, England, was contained in a special order of the quarantine department of the port of New York to subject all vessels excepting passenger ships from Liverpool to fumigation at the end of their voyage for the destruction of rats, and that they shall comply with the plague regulations of the port.

Joint Meeting of Philippine Medical Associations.—The Philippine Island Medical Association has been invited by the Colegio Medico Farmaceutico de Filipinas to hold its annual scientific session jointly with their organization. The council of the Philippine Island Medical Association is strongly in favor of holding such a joint session. The Colegio is a very active organization both socially and scientifically, and the Filipino physicians take much interest in the organization.

Quacks at Havana.—The *Vida Nueva* of Havana remarks that it is truly alarming the increasing number of charlatans practicing in the capital of the Republic of Cuba. The newspapers carry the advertisements of dozens of them who offer moral and physical treatment for every kind of disease. It adds: "Some of them practice medicine, as is well known, without possessing the most rudimentary knowledge of this difficult science. It would be well if the medical authorities would come to some effectual decision as to the matter for conditions are graver even than appears on the surface. It is necessary to combat this evil, because every one knows that the ignorant are inclined to put themselves in the hands of quacks, who exploit their ignorance."

Max Nordau Interned at Madrid.—Dr. Max Nordau, author of several satirical arraignments of our civilization, long Paris correspondent of the Vienna *Neue Freie Presse*, has been interned at Madrid for some time. He was admitted to the practice of medicine in 1882. The Surgeon-General's Catalogue states that his real name is Südfeld, Nordau being a free translation, "North meadow" for "South field." His best known work is "Conventional Lies of Our Civilization," in which he included "Gottesgnadenthum" as one of the most colossal lies. This made it necessary for him to live outside of Teutonic countries, and he made Paris his home. When the war began, he had to leave France as well. The *Siglo Medico* gives a recent interview with him in which he discussed Semmelweis' use of chlorin in disinfection in 1847.

Deaths in the Profession Abroad.—A. Combe, professor of pediatrics at the University of Lausanne, Switzerland, aged 68.——J. Brault, professor of the diseases of tropical countries and of skin diseases and syphilis at the University of Alger, in Algiers, Africa, and author of numerous monographs on these subjects, aged 55.——F. Massei, professor of affections of the ear, nose and throat at the University of Naples, aged 70. He founded in 1881 the *Archivio Italiano di Laringologia* which he called "La nostra carta di visita," and in which he constantly reiterated the principle that the specialties must beware of becoming closed circles but must always clasp hands with general clinical medicine. He has long been the leader in otorhinolaryngology in Italy and represented his specialty in the international medical congresses. He has a record of over 500 tumors of the larynx successfully removed by the natural route.

LONDON LETTER

London, March 26, 1917.

The Waste of War

Mr. Barnes, the pensions minister, described in Parliament the measures taken to deal with the disabled of the war and their dependents, which have already reached a huge total. The numbers at present are: disabled men, 157,544; widows, 62,796; children of those widows, 128,294; dependents of deceased men, 29,832; widows who have not reached the pension stage, about 125,000; men in hospitals, about 65,000; medically unfit, about 65,000, or a total of 673,741 men, women and children. In regard to eligibility the distinction drawn between disease attributable to military service and aggravated by it will be abolished. In future if a man's disease is aggravated by the war he will get his pension just the same as though it is caused by the war. Formerly he received only a single sum in the form of a gratuity. It is proposed to give a man a flat rate pension irrespective altogether of his earnings or earning capacity. In addition to the flat rate pension in respect of which no inquiry will be made about earnings or earning capacity, a man will have an alternative pension on cause being shown, and that will be based on his earnings before the war; but in the assessment of it regard will be had to his earning capacity. In addition, there will be allowances. A man in need of constant attendance will have $4 a week allotted to him for his wife or other person to look after him. After dealing with the pensions of men only partly disabled, Mr. Barnes made two novel suggestions in regard to treatment and training. With regard to treatment a man may be fined if he does not conform to the recommendations of his physician. As to training, the intention is to attract a man to it by additional inducements. He will be given a full pension; fees will be paid for him; his wife will have a full separation allowance, and so on; and, in addition, for the period during which he undergoes training for a new occupation he will be given $1.25 a week as a bonus at the end of the period. The case of a man under 20 per cent. disability will be dealt with by way of a gratuity or temporary allowance, and the provisions mentioned do not apply to such a man. The scheme in its entirety, according to the actuary's report, will involve a capital charge of $1,980,000,000, and in the first year $125,000,000. In addition to this there are what are called "the medical unfit," who number over 100,000. These men were passed into the army owing to the great pressure at which physicians had to work in the early days. Hundreds of them have passed into the army who should never have been passed, veritable weeds that ought never to have been there at all. Some of them concealed their ailments when they were examined, and thousands of them did not do more than two or three days' service. But, allowing for all that, the state must assume some responsibility, because the physician had passed them. But the measure of responsibility is by no means anything like a pension for their lives. What is proposed is to put them back where the state found them. In exceptional cases, where a man's disease had been accelerated by the war, there will be a gratuity of $500. The great bulk of them will be disposed of by a small gratuity according to a scale which has been drawn up.

Deaths Due to Wild Animals in India

A large number of deaths is caused annually in India by wild animals. During the year ended June 30, 1916, 26,385 persons died in India from snake bite, an increase of 3,700 over the previous year. Over 2,000 more deaths were caused by elephants, tigers and other animals. During the past five years, elephants, tigers and other animals have killed 9,192 people in British India, and of these tigers have claimed a total of 3,682. In the same period, 116,828 persons have died as the result of snake bites. In the United Provinces, one man-eating tiger in the Almora district killed ten persons out of the provincial total of twenty. In order to effect the destruction of as many wild animals and snakes as possible, the government pays bounties. The number of animals destroyed in 1915 was 25,036, including 1,582 tigers, 6,623 leopards, 2,775 bears and 2,191 wolves. The total number of snakes killed was 184,663.

Cocain and Unqualified Dentists

A regulation was made last July forbidding the sale of cocain except to authorized persons, in consequence of the existence of the cocain habit among soldiers in the London area. An outcry was then raised by unqualified dentists, and a temporary permit was issued under which they could purchase cocain preparations not exceeding 1 per cent. strength. In November the home secretary appointed a committee to consider the authorizations granted for the use of cocain in dentistry, and to advise whether or not they should be continued or modified, and, if continued, in what cases and with what conditions. The committee has now reported. The majority (consisting of laymen) proposes that persons practicing bona fide as unqualified dental practitioners shall be entitled to apply for registration for right to purchase preparations of cocain containing not more than 1 per cent. The committee makes these recommendations for two reasons. It holds that to prohibit unqualified dental practitioners from using cocain would be inconvenient to them, since they have not the requisite skill in the use of novocain, and, secondly, that there is no evidence "to show that there is any serious or perhaps even noticeable prevalence of the cocain habit among the civilian or military population." Bayliss, the physiologist, the only medical member of the committee, differs from the other members. He is convinced that the use of cocain is not necessary for any dental operation, and that its place can be taken by novocain without inflicting any hardship on the dentist. Unqualified dentists have laid stress on the alleged necessity of adding epinephrin to the novocain solution, and it seems that in some cases more was added than was necessary. Bayliss thinks that the injurious results may have been due rather to the septic state of the mouth, and that no local anesthetic whatever ought to have been used. He criticizes the arrangements under which unqualified dentists can obtain cocain. There are 13,000 persons engaged in the practice of dentistry, of whom only about 5,000 are qualified. Bayliss holds that it would be a mistake to give the unqualified dentists official recognition when the scarcity of qualified practitioners would be more effectively met by raising the status of the dental profession as a whole. His conclusion is that since the sale of cocain is attended with serious risks to the community and is unnecessary in dentistry, the permit issued to unregistered dentists to obtain preparations of cocain should not be continued.

Cancer Mortality

For the first time the mortality from cancer has overtaken that from consumption in this country. This startling fact is revealed in the annual report of the Society for the Prevention and Relief of Cancer. At the present time, in England and Wales, 40,000 persons die annually from the scourge. A warning is given in the report regarding the effects of the war, as cancer frequently develops at the site of a former scar or wound. Whatever the underlying cause of the malady may be, the lamentable fact remains that as a result of the present unparalleled warfare, we shall have to face in the near future a most serious increase in malignant growths in men, especially the men who have served their country in the field.

PARIS LETTER

Paris, March 22, 1917.

The War

STRICTER SANITARY MEASURES TO BE ADOPTED ON CALLING TO THE COLORS THE MEN OF THE "1918" CLASS

Because of the youth of the recruits of the "1918" class, which are the next to be called into service, Justin Godart, undersecretary of state and head of the military health service, has deemed it proper to direct particular attention to their bedding, clothing, food, to the health conditions of the districts in which they will be assembled, to the proper course of their military instruction, and to the development of their military spirit. The undersecretary has ordered that the barracks reserved for these recruits be selected from among the best, and that they be evacuated sufficiently long before their occupation by the "1918" class to permit of carrying out proper hygienic measures, such as fumigation, whitewashing of the walls and cleaning the floors with antiseptics. The director of the sanitary service and his assistants are to pay a personal visit to the barracks in every district, in order that all the buildings, without exception, which are to be occupied by any contingent of the "1918" class, may be examined from the standpoint of general hygiene and with a view to prevent the outbreak of epidemic diseases. This investigation must be completed by March 30. A formal prohibitive order will be issued forbidding the drying in sleeping rooms of damp clothing and linen, on the ground that the humidity resulting from this practice may cause sore throat and bronchitis. Drying rooms, specially heated, will be provided in all the barracks. Shower baths will be installed where they are lacking, and those already existing will be put in good order. Every soldier will be required to take a shower bath once a week. So far as food is concerned, the meat ration will be 400 gm., but during the first three months after the call the meat ration will be 450 gm. With the beginning of systematic instruction, just before the morning drill, hot coffee, together with a cold or warm sandwich, will be served, and hot drinks will be furnished during the day whenever the weather conditions seem to require it.

STERILIZATION OF INSTRUMENTS BY FORMALDEHYD VAPOR

Since the beginning of the war Chevassu has employed formaldehyd vapor to sterilize his instruments. This sterilization is effected in a very simple manner by producing a formaldehyd vapor bath in the box containing the instruments. The procedure consists in placing in the regular metallic box or sterilizer, or in any other kind of sterilizer, two little bags, each containing four trioxymethylene pastils. In the surgical automobile ambulance, of which Chevassu is director, sterilization was accomplished by placing the boxes in a linen-drier to which is attached a thermometer. The temperature must not exceed 55 C. At 50 C. sterilization requires only twenty minutes, which is certainly very rapid, and as it will not affect the instruments in any way, it is recommended particularly for the sterilization incident to the performance of many operations, as in a surgical automobile ambulance. If a linen-drier is not at hand, the metallic box may be placed on two bricks laid on a stove, or in summer the sun will suffice to bring about sterilization. The method is so simple that, now that it has given superabundant proof of its value, it seems bound to become the ideal method of sterilization for all of the sanitary divisions of the army, and after the war is over it is certain to be the chosen method of the general practitioner.

WORKSHOP FOR BLIND SOLDIERS

A new movement is being launched for the purpose of creating industrial workshops for blind soldiers. They will supplement workshops of reeducation referred to in a previous letter (The Journal, March 18, 1916, p. 905). The responsible parties of this movement are not only philanthropists, but also commercial and industrial societies. One of these workshops will be given over to the manufacture of automobile and aeroplane motors; it will be opened soon. This work has been conceived in a practical spirit, and is expected to yield good results. The blind, themselves, will participate in all the benefits of the enterprise in the proportion of 95 per cent., which will be added to their salary. The industrial side of the movement is taken care of by one philanthropic association which proposes to lodge the unmarried blind workers coming from regions invaded by the enemy, and to look after their material welfare, besides forming little reunions, circles or groups to look after the intellectual welfare of the blind. This movement will be known as "the trades of the blind soldiers."

Reduction in Size of Medical Bulletin

For economic reasons it has become necessary to reduce the number of editions and pages of the daily newspapers. For the same reasons, the *Bulletin de la Société médicale des hôpitaux de Paris* will put into effect after March 15 the following rules: The regular members of the society will not be permitted to use more than four pages of the bulletin for their communications and presentations (illustrations excluded); corresponding members and nonmembers will not be permitted to use more than two pages, but all may occasionally make use of two additional pages at their own expense, paying the society 5 francs ($1) per page.

Treatment of Malaria by Arsenic and Quinin

Ravaut and de Kerdrel have reported the excellent results which they have obtained from treating malaria with a mixture of arsenic and quinin. Starting with the knowledge gained from the study of syphilis and amebic dysentery, they show that the parasites causing these three diseases are possessed of common characters. They are the parasites which are encysted deeply in the organism. These chronic maladies are characterized by acute exacerbations, the result of the multiplication of these parasites and their dissemination throughout the body. So far as the treatment is concerned, it must be methodical, and given in series. The combination of arsenic and quinin enhances greatly the efficacy of either agent alone. The treatment consists of ten intravenous injections of neosalvarsan from 0.15 gm. to 0.30 gm., repeated every third day. In the interval between the injections, quinin is administered intravenously or by mouth. Ravaut and de Kerdrel were able to effect a cure in fifty-three cases in which all other methods of treatment had failed. They have also obtained good results in the treatment of malarial hematuria and gastric hemorrhages of malarial origin. At the same time, the general condition of the patient was greatly improved.

Recurrence of Mumps

According to Florand, the recurrence of mumps, less rare than one would believe, is common in certain countries. He made this observation in the contagious service of the Val-de-Grâce Hospital, where a number of Annamites were treated for the third and even the fourth attack of mumps. Unless there was a complicating orchitis, the condition was usually benign, and nearly always apyretic.

Movement to Raise the Birth Rate

The league "Pour la vie" proposes to exert itself to the utmost to raise the birth rate in France. It takes as its task the arousing of public opinion on the necessity of revising civil, political, administrative and fiscal legislation.

Association News

THE NEW YORK SESSION

Railroad Rates Announcement

Those who are going to New York for the Annual Session are urged to consult the local ticket agent at their home town for complete information regarding fares, time limits, extentions and stop-over privileges available in making the trip. There is on file in every ticket office the traffic schedule which officially informs local agents of the rates from that point. Fellows should not leave the determination of the route desired until just before they are ready to start on the trip. Local ticket agents may have to obtain special tickets for these excursions from central points, and they must be arranged in time so that the tickets may be purchased when the journey is begun. These agents will also be able to give information concerning circuit routes which will permit making whatever side trips may be desired in connection with the journey to or from New York. Those from Chicago, St. Louis and the West may purchase short limit summer tourist tickets, which will be on sale to New York City, commencing June 1, at lower fare and with more liberal limit and stop-over privileges than apply in connection with reduced fares authorized for conventions. Round trip circle tour tickets, going one route and returning another, are available, sale commencing May 15, to New York and to Boston, in one direction via New York with a choice of many routes: through Niagara Falls, Montreal, Washington, D. C., Baltimore, and Norfolk, Va., including rail and water trips if desired.

The following railroad rates are reported:

Central Passenger Association: Two cents per mile in each direction, but in no case more than summer tourist fares. Signature form of tickets will be sold June 3, 4 and 5, final return limit to reach the original starting point not later than midnight, June 12. A joint tariff authorizing fares for the annual session of the Association from points in the Central Passenger Association territory is now being compiled.

The Trunk Line Association: This serves most of New York, Pennsylvania, New Jersey, Delaware, Maryland and West Virginia, also a part of Virginia, and announces that there will be available for those attending the coming session of the American Medical Association a railroad rate of 2 cents per mile in each direction with a minimum of $1 for the round trip on the certificate plan, going and returning via same route, only. Going tickets in connection with certificates to be sold June 3, 4 and 5 at one-way fares applicable to New York City on the certificate plan. These certificates must be obtained from the ticket agent at the starting point (or nearest station issuing through tickets to New York City) and to be valid for the reduced fares returning, must be endorsed by the secretary of the American Medical Association, indicating that the holder has been in attendance at the meeting and is entitled to the reduction, and must also be validated by a special agent on either June 5, 6 or 7. Return tickets will be sold on presentation of validated certificates June 5-11 at the difference between the fares paid on the going trip and the fares for the round trip; these latter tickets to be limited to continuous passage to destination, which must be reached in no case later than on June 12. No fee will be required for the validation of certificates.

Western Passenger Association and Southwestern Passenger Association: The members of the Western Passenger Association and Southwestern Passenger Association have not announced any reduced fares; but commencing June 1, 1917, round-trip summer tickets will be on sale to New York from points in the territory of those associations, at lower fares and with more liberal return limit and stop-over privileges than apply in connection with reduced fares authorized for conventions.

Clinics at the New York Session

The Local Committee on Arrangements for the New York session of the American Medical Association announces that it has about completed the program of clinics to begin Monday, June 4, and continue through Tuesday, June 5. A general committee has appointed a subcommittee and has assigned to this the task of arranging clinics and demonstrations in general medicine; pharmacology and therapeutics; pathology and physiology, including the clinical and medicolegal phases, laboratory diagnosis and cancer research; preventive medicine and public health, including state and municipal phases of the work; pediatrics, dermatology, neurology, mental diseases, general surgery, orthopedic surgery, gynecology, obstetrics, urology, surgery of the colon and rectum, ophthalmology, otology, rhinology, laryngology, stomatology, roentgenology, anesthetics, nursing, including training schools and district nursing, hospital social service, planning and financing municipal and other hospitals, hospital superintendency and executives, and military and Red Cross work.

The programs already outlined include clinics, ward walks, demonstrations, both clinical and laboratory, conference, necropsies, moving picture demonstrations, exhibits by means of charts, models and laboratory specimens, and visits to the officers of the different branches of the health department and other points of medical interest.

Physicians of New York have arranged to place the medical resources of the city at the disposal of the Fellows of the American Medical Association. Interesting material will be offered to those who go to New York, no matter how large the attendance at the annual session may be. In view of this exceptional opportunity to see this medical center, those who can go to New York should plan to arrive not later than the morning of Monday, June 4, so that they may register both as in attendance at the annual session and with the Local Committee on Arrangements. The privileges of these clinics are to be limited to those who are registered as in attendance at the annual session of the Association.

Marriages

Asst. Surg. Louis H. Williams, M. R. C., U. S. Navy, to Miss May Ashby Warden of Washington, D. C., March 31.

James Piner Bartley, M.D., Bartlesville, Okla., to Miss Elizabeth B. Ensor of Baltimore, at Bartlesville, March 1.

William V. Pruett, M.D., Brownsville, Tenn., to Miss Elizabeth Selden Henry of Chicago, March 5.

John Archibald McIntyre, M.D., Walcott, Iowa, to Miss Miriam Sybil Bliss of St. Paul, April 7.

Leslie Cornealous Randall, M.D., Licking, Mo., to Miss Alta Dunham of Craddock, Mo., April 8.

Herman Morris Adler, M.D., Chicago, to Miss Frances Porter of Hubbard Woods, Ill., recently.

Sophia Billenkamp, M.D., to Mr. John Conrad Donis, both of St. Louis, at Clayton, Ill., April 4.

Arno Roy Zack, M.D., to Miss Elizabeth Wagner, both of Bethlehem, Pa., March 29.

Deaths

John Kearsley Mitchell, M.D., Philadelphia; University of Pennsylvania, Philadelphia, 1883; aged 57; a Fellow of the American Medical Association and College of Physicians of Philadelphia; a member of the Association of American Physicians, American Neurological Association, and many special societies; physician to the Philadelphia Infirmary for Nervous Diseases and consulting neurologist to the Pennsylvania Institution for Feebleminded Children; from 1886 to 1892 demonstrator of general symptomatology and diagnosis, and lecturer from 1893 to 1898 in his alma mater; co-author with his father, the late Dr. S. Weir Mitchell, of "Fat and Blood," the eighth edition of which appeared in 1898; author of a work on "Remote Consequences of Injuries of Nerves," which appeared in 1895, and of one on "Mechanotherapy Massage and Physical Education," which was published in 1904; who had been ill with heart disease for the last eight months; died at his home, April 10.

George Fuller Hawley, M.D., Chicago; College of Physicians and Surgeons in the City of New York, 1868; aged 73; formerly a Fellow of the American Medical Association; a member of the Illinois States Medical Society, Mississippi Valley Medical Association and American Academy of Ophthalmology and Oto-Laryngology; professor of otology, rhinology and laryngology in the Illinois Post-Graduate Medical School; a member of the staff of Cook County Hospital, and the Illinois Charitable Eye and Ear Infirmary; one of the first men in Chicago to specialize on diseases of the eye, ear, nose and throat; an assistant of Sir Morell Mackenzie in the early eighties; died at his home, April 16, from chronic myocarditis.

P. A. Surg. Earle Mason Brown, U. S. Navy (retired), Los Angeles; University of Michigan, Ann Arbor, 1901; aged 40; a Fellow of the American Medical Association, and a member of the Association of Military Surgeons of the United States; who entered the navy, May 8, 1902, and was retired, April 8, 1910, for incapacity resulting from an incident of service, after two years and ten months' sea service and four years and two months' shore or other duty; died in Palm Springs, Calif., April 3.

Joseph B. Payne, M.D., Hot Springs, Ark.; Memphis (Tenn.) Medical College, 1855; New Orleans School of Medicine, 1859; aged 83; vice president of the Arkansas State Medical Society in 1890; surgeon of the Nineteenth Arkansas Infantry, C. S. A., during the Civil War; at one time city physician of Hot Springs and at the time of his death president of the local school board; died at the home of his daughter in Argenta, March 27.

Isaac Newton Rawles, M.D., Dyersburg, Tenn.; Vanderbilt University, Nashville, Tenn., 1880; aged 59; a member of the Tennessee State Medical Association and first president of the Dyer County Medical Society; for several years county and city health officer; president of the city board of education; a member of the legislature in 1905 and 1906; died at his home, February 25, from cerebral hemorrhage.

John Thomas Manning, M.D., Lineville, Ala.; Vanderbilt University, Nashville, Tenn., 1885; aged 52; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Alabama; died at his home, March 30, from the effects of a gunshot wound of the head, believed to have been self-inflicted, with suicidal intent, while despondent on account of ill health.

Isaiah Franklin Houx, Gordon, Texas (license, Judicial District Board, Texas, 1874); a practitioner since 1866; aged 80; a member of the State Medical Association of Texas; a Confederate veteran; also a pharmacist; died in St. Joseph's Infirmary, Fort Worth, Texas, March 21, from peritonitis, following an operation on the prostate gland a few days before.

Leopold Goldschmiedt, M.D., Los Angeles; New York University, New York, 1869; aged 69; formerly a member of the Medical Society of the State of California; deputy coroner of New York City from 1876 to 1882; sanitary inspector of New York City from 1884 to 1888; inspector of schools at Ensenada, Lower California, Mexico; died in Los Angeles, February 12.

William Washington Everett, M.D., Highland, Ill.; College of Physicians and Surgeons, Keokuk, Iowa, 1877; aged 60; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; surgeon to St. Joseph's Hospital, Highland; died in a hospital in St. Louis, March 30, from a nervous breakdown.

William H. Gillum, Rockville, Ind. (license, Indiana, 1897); aged 69; a member of the Indiana State Medical Association, and formerly secretary of the Parke County Medical Society and health officer of Parke County; local surgeon of the Vandalia System; a Confederate veteran; a practitioner since 1868; died at his home, March 28.

John Edmond Howe, M.D., Greenfield, Iowa; College of Physicians and Surgeons, Keokuk, Iowa, 1873; aged 69; a Fellow of the American Medical Association; a member of the State Board of Pardons and Parole from 1909 to 1911; a well known surgeon of southern Iowa; died at his home, April 3, from heart disease.

Delbert Melvin Shively, M.D., Kansas City, Kan.; University Medical College, Kansas City, Mo., 1901; aged 45; a member of the Kansas Medical Society; coroner of Wyandotte County, Kan., for two terms and twice president of the Western Association Baseball League; died at his home, April 2.

John W. Meek, M.D., Camden, Ark.; New Orleans School of Medicine, 1870; aged 67; formerly a Fellow of the American Medical Association; a member of the Arkansas Medical Society; formerly president of the board of health of Camden and for two terms state senator; died at his home, March 31.

Walter W. Wilkinson, M.D., Catawba Sanatorium, Va.; George Washington University, Washington, D. C., 1905; aged 40; a Fellow of the American Medical Association; assistant physician at the Catawba Sanatorium, Va.; died in that institution, March 28, from tuberculosis.

William Wallace Smith, M.D., Avoca, N. Y.; Bellevue Hospital Medical College, 1871; aged 71; a member of the Medical Society of the State of New York and for seventeen years secretary of the Steuben County Medical Society; died at his home, February 4, from pneumonia.

Harvey Lionel Morris, M.D., Vassar, Mich.; Saginaw Valley Medical College, Saginaw, Mich., 1898; New York University, New York, 1899; aged 40; formerly a Fellow of the American Medical Association; died in Miami, Fla., March 28, from pernicious anemia.

Judson Beach, M.D., Etna, N. Y.; University of Michigan, Ann Arbor, 1874; aged 72; a Fellow of the American Medical Association; a veteran of the Civil War; for more than forty years a practitioner of Etna; died at his home, March 16, from angina pectoris.

John Harvey Hansen, M.D., Grandfield, Okla.; Kentucky School of Medicine, Louisville, 1883; aged 69; a Fellow of the American Medical Association; once president of the Decatur County (Iowa) Medical Society; died at his home, March 11, from pneumonia.

August Ernst Brune, M.D., San Francisco; Cooper Medical College, San Francisco, 1875; University of Berlin, Germany, 1877; aged 67; a member of the Medical Society of the State of California; died at his home, March 24, from cerebral hemorrhage.

Thomas G. Stephens, M.D., Sidney, Iowa; Western Reserve University, Cleveland, 1856; aged 84; a pioneer practitioner of Fremont County, where he had practiced for more than half a century; died at the home of his daughter in Sidney, March 20.

Charles M. Matson, Brookville, Pa. (license, Jefferson County, Pa., 1877); aged 83; a practitioner since 1858; founder and first president of the Jefferson County Medical Society; surgeon of volunteers during the Civil War; died at his home, March 27.

Heman Walbridge Fulkerson, M.D., Louisa, Ky.; Kentucky School of Medicine, Louisville, 1907; aged 32; formerly a member of the Kentucky State Medical Association; died in the Central State Hospital, Lakeland, Ky., March 23, from paresis.

James H. Frank, M.D., Anoka, Minn.; Minnesota Hospital College, Minneapolis, 1882; American Medical College, St. Louis, 1883; aged 63; for several years physician and surgeon in charge of the Anoka State Hospital; died at his home, April 1.

Robert H. Baird, M.D., Howell, Mich.; Detroit College of Medicine and Surgery, 1901; aged 42; a Fellow of the American Medical Association; who went to Vero, Fla., last fall on account of his health; died in that place, March 23, from heart disease.

Samuel Tate Blair, M.D., Springfield, Mo.; University of Nashville, Tenn., 1867; aged 78; a Confederate veteran; for several years a member of the faculty of the Northwestern Medical College, St. Joseph, Mo.; died at his home, March 30.

John J. Stites, M.D., Pontiac, Ill.; Eclectic Medical Institute, Cincinnati, 1850; Medical School of the Valley of Virginia, Winchester, 1860; aged 90; formerly a member of the Illinois State Medical Society; died at his home, March 25.

Willard Adolphus Whitney, M.D., Big Rapids, Mich.; Homeopathic Hospital College, Cleveland, 1870; aged 73; an honorary member of the Michigan State Medical Society; died at his home, February 11, from pernicious anemia.

Roy Earl Fisk, M.D., Salt Lake City, Utah; Bennett Medical College, Chicago, 1913; aged 34; formerly a practitioner of Highwood, Mont.; died at St. Mark's Hospital, Salt Lake City, February 24, from acute rheumatic endocarditis.

George W. Baskett, M.D., Van Alstyne, Texas; University of Louisville, Ky., 1875; aged 67; formerly a Fellow of the American Medical Association; a member of the State Medical Association of Texas; died at his home, March 26.

Joseph Faerber, Merrill, Wis. (registration, Wisconsin, 1899); aged 78; a practitioner since 1862; for two years surgeon in the navy of Holland; but for thirty-five years a practitioner of Merrill; died at his home, about March 27.

John Winfield Keppel, M.D., Youngstown, Ohio; Western Reserve University, Cleveland, 1886; aged 61; formerly a member of the Ohio State Medical Association; also a druggist; died in the Youngstown Hospital, March 19.

Benjamin F. Thomson, M.D., Mount Sterling, Ky.; Jefferson Medical College, 1864; aged 76; for more than half a century a practitioner of Montgomery County; died at his home, March 21, from carcinoma of the liver.

William T. Green, M.D., Albion, Ind.; Rush Medical College, 1880; aged 59; a member of the Indiana State Medical Association; state senator from the Twelfth District; died in Indianapolis, January 23, from pneumonia.

George S. Walker, M.D., Staunton, Va.; Jefferson Medical College, 1859; aged 80; assistant surgeon of the Twenty-First North Carolina Cavalry, C. S. A., during the Civil War; died at his home, March 13, from erysipelas.

Hugh Austin Pinson, M.D., Pittsburgh; Atlanta (Ga.) Medical College, 1915; aged 33; house physician at St. John's General Hospital, Pittsburgh; died at that institution, March 27, after an operation for appendicitis.

John Dean Scouller, M.D., Pontiac, Ill.; University of Buffalo, N. Y., 1870; aged 81; for nineteen years superintendent of the State Reformatory, Pontiac; died in that city, March 31, after a surgical operation.

Oliver Prescott Sook, M.D., Newark, Ohio; Homeopathic Hospital College, Cleveland, 1871; aged 73; local surgeon for the Pennsylvania System; a veteran of the Civil War; died suddenly in his office, April 1.

Charles E. Barnes, M.D., Mountain Grove, Mo.; Barnes Medical College, St. Louis, 1895; aged 44; formerly a member of the Missouri State Medical Association; died in a sanatorium in St. Louis, March 24.

James Sibbald, M.D., Philadelphia; Jefferson Medical College, 1881; aged 57; a specialist in proctology; for several years surgeon to St. Timothy's Hospital; died at his home, March 30, from heart disease.

Elijah F. Miller, M.D., Verdella, Mo.; American Medical College, St. Louis, 1880; aged 60; a member of the Missouri State Medical Association; died in Mount Carmel Hospital, Pittsburg, Kan., March 21.

Louis Henry Hallock, M.D., Flint, Mich.; Miami Medical College, Cincinnati, 1882; aged 57; for many years a druggist of Sebawaing, Mich., and Cheyenne, Wyo.; died at his home, March 31, from carcinoma.

Harry Leach Bender, M.D., New York; College of Physicians and Surgeons in the City of New York, 1894; aged 44; a specialist on diseases of the nose and throat; died at Clifton Springs, N. Y., March 29.

Maximilian C. Cornelius, M.D., Chicago; John A. Creighton Medical College, Omaha, Neb., 1895; aged 43; died in St. Luke's Hospital, Chicago, April 3, after an operation for carcinoma of the bladder.

James Everett Johnson, M.D., Denver; Denver College of Medicine, 1895; aged 45; a member of the Colorado State Medical Society; died in San Diego, Calif., March 17, from chronic endocarditis.

James W. Stone, M.D., Henderson, Ky.; University of Louisville, Ky., 1880; aged 62; a member of the Kentucky State Medical Association; died at his home, February 5, from heart disease.

Leroy M. Lee, M.D., Orlando, Okla.; Washington University, St. Louis, 1872; aged 65; for many years a practitioner of Elsberry, Mo.; died at his home near Orlando, March 16, from heart disease.

John Wesley Way, M.D., Kremmling, Colo.; Kentucky School of Medicine, Louisville, 1892; aged 49; formerly a member of the Colorado State Medical Society; died at his home, March 24.

George A. McClain, M.D., Johnson City, Tenn.; Vanderbilt University, Nashville, Tenn., 1891; aged 68; formerly a member of the Tennessee State Medical Association; died at his home, March 21.

William J. Montford, M.D., Swansboro, N. C.; Jefferson Medical College, 1859; aged 77; formerly a member of the Medical Society of the State of North Carolina; died at his home, March 31.

Henry W. Ogden, M.D., Evanston, Ill.; Rush Medical College, 1881; aged 73; for many years a practitioner at Fort Atkinson, Wis.; a veteran of the Civil War; died at his home, February 17.

George W. Redmond, Potter, Kan. (license, Kansas, 1901); aged 68; formerly a Fellow of the American Medical Association; died in the Atchison (Kan.) Hospital, March 28, from empyema.

Charles Locke Skinner, M.D., Charlestown, W. Va.; University of Virginia, Charlottesville, 1897; aged 42; a Fellow of the American Medical Association; died at his home, March 24.

Benjamin Eugene Donham, M.D., Saulnierville, N. S.; Harvard Medical School, 1868; aged 73; a veteran of the Civil War; died in the Togus (Me.) Soldiers' Home in February.

Charles H. Walden, New Market, Ind. (license, Indiana, 1897); aged 62; formerly a Fellow of the American Medical Association; died at his home, January 29, from tuberculosis.

Marcus Jay Williams, M.D., Syracuse, N. Y.; University of Vermont, Burlington, 1878; aged 63; associate physician to the Crouse-Irving Hospital; died at his home, March 11.

Robert Henry Sykes, M.D., North Warren, Pa.; Western Pennsylvania Medical College, Pittsburgh, 1895; aged 51; died in the West Penn Hospital, Pittsburgh, March 12.

Perry Llewellyn Anderson, M.D., New York; College of Physicians and Surgeons, Chicago, 1886; aged 57; died in Rochester, Minn., February 24, from chronic nephritis.

Alexander C. Spencer, M.D., Bloomington, Ind.; Central College of Physicians and Surgeons, Indianapolis, 1883; aged 65; died at his home, near Bloomington, February 7.

Victor Hugo Ruble, M.D., Columbus, Mont.; Bellevue Hospital Medical College, 1887; aged 55; was accidentally shot and killed on his ranch, near Columbus, March 19.

William Hause, M.D., Westport, Ind.; Eclectic Medical Institute, Cincinnati, 1865; aged 79; a veteran of the Civil War; died at his home, March 22, from nephritis.

Julia Phiania Harton, M.D., Philadelphia; Women's Medical College of Pennsylvania, Philadelphia, 1904; aged 35; died at her home, March 15, from tuberculous meningitis.

Joseph Coloni Dreher, Battle Creek, Mich. (license, Michigan, 1900); aged 72; a practitioner since 1869; died at the home of his son in Battle Creek, March 22.

Octavius King Yates, M.D., West Paris, Me.; Medical School of Maine, Brunswick, 1870; aged 83; died at his home, March 18, from cerebral hemorrhage.

Simeon Gray, Worthington, Ind. (license, Indiana, 1897); aged 69; a practitioner since 1870; died at his home, January 31, from cerebral hemorrhage.

Charles Everett Thompson, M.D., Hamilton, Ont.; University of Toronto, Ont., 1916; aged 22; died in Toronto, February 3, from pneumonia.

Lloyd John O'Brien, M.D., Burnips, Mich.; Chicago College of Medicine and Surgery, 1913; aged 36; died at his home, March 19, from anemia.

Joseph D. Zimmerman, M.D., Lebanon, Pa.; University of Pennsylvania, Philadelphia, 1871; aged 72; died at his home, March 22.

William A. Johnston, M.D., Cambridge City, Ind.; Eclectic Medical Institute, Cincinnati, 1881; aged 79; died at his home, February 7.

Harvey A. White, M.D., Chicago; Eclectic Medical Institute, Cincinnati, 1882; aged 78; died in Tampa, Fla., March 27.

Abbie A. Hinkle, M.D., Evanston, Ill.; Hahnemann Medical College, Chicago, 1887; died at her home, April 2.

The Propaganda for Reform

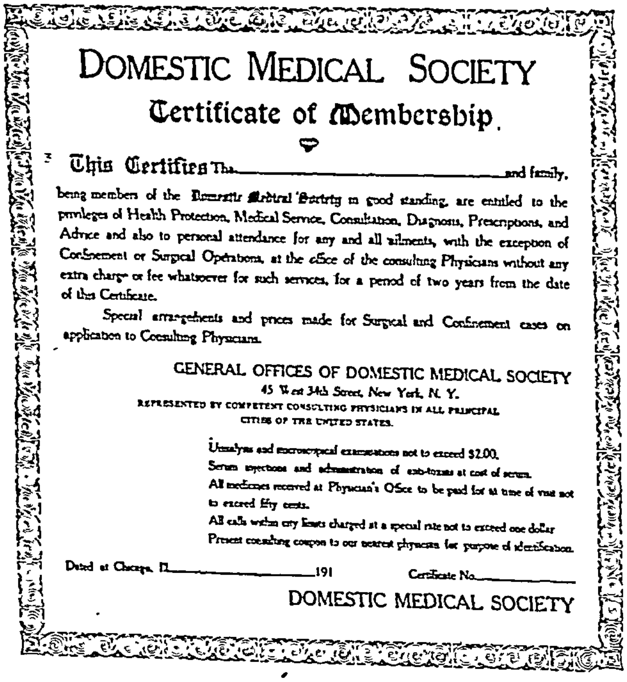
IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

THE "HOME MEDICAL ADVISER" TO DATE

"Free" Medical Service to Purchasers of "Home Treatment" Books

A modification of the old "free chromo with every pound of tea" scheme has been worked for the past few years in the sale of books of the "home medical adviser" type. The system is one of wide distribution and is operated under various names as well as from various cities.

The plan generally seems to be to have agents go out from various centers selling a pretentious looking volume. The book, or books, for there are apparently more than one, go under various names, having been sold under such titles as "Medicology," "Domestic Medical Practice," "Health and Longevity," "Library of Health," etc. Sometimes they come in a single volume of about 1,500 pages and one-half foot thick; in other instances, apparently, they are prepared in two-volume form. Such specimens as have been brought or sent to this office indicate that these imposing tomes are printed from stereotypes that have seen better days. In at least one instance the matter seems to be made up largely from a book published over thirty years ago. This book, while written by men of standing and containing matter of value and interest to the public, was never prepared with the slightest idea on the part of the authors that it would be revamped and used as a premium for an alleged free medical treatment.



DOMESTIC MEDICAL SOCIETY

Certificate of Membership.

This Certifies Tha____________________and family, being members of the Domestic Medical Society in good standing, are entitled to the privileges of Health Protection, Medical Service, Consultation, Diagnosis, Prescriptions, and Advice and also to personal attendance for any and all ailments, with the exception of Confinement or Surgical Operations, at the office of the consulting Physicians without any extra charge or fee whatsoever for such services, for a period of two years from the date of this Certificate.

Special arrangements and prices made for Surgical and Confinement cases on application to Consulting Physicians.

GENERAL OFFICES OF DOMESTIC MEDICAL SOCIETY
45 West 34th Street, New York, N. Y.
REPRESENTED BY COMPETENT CONSULTING PHYSICIANS IN ALL PRINCIPAL CITIES OF THE UNITED STATES.

Urinalysis and microscopical examinations not to exceed $2.00.
Serum injections and administration of anti-toxins at cost of serum.
All medicines received at Physician's Office to be paid for at time of visit not to exceed fifty cents.
All calls within city limits charged at a special rate not to exceed one dollar
Present consulting coupon to our nearest physician for purpose of identification.

Dated at Chicago, Ill.______________191   Certificate No.________

DOMESTIC MEDICAL SOCIETY

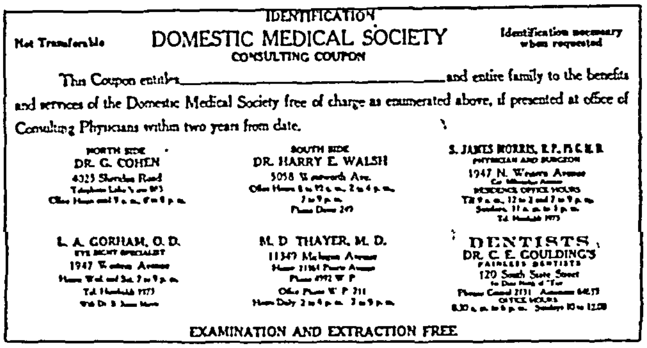
Photographic facsimile (reduced) of the "Certificate of Membership" issued by the Chicago branch of the "Domestic Medical Society" with offices at 45 West 34th Street, New York City.

DOMESTIC MEDICAL SOCIETY

Each purchaser of the "health book" is given a very official-looking certificate which is said to entitle him and his family "to the privileges of Health Protection, Medical Advice, Consultation, Health Advice, and Prescriptions at the office of the consulting Physicians without any extra charge or fee whatsoever for such services, for a period of two years from date of this Certificate." The business is done by agents who, before going forth on their errand, memorize a line of "patter" to unload on prospective victims. Here is part of the "Demonstrators Talk" which is said to have been used by those who attempted to sell "Domestic Medical Practice":

THE DEMONSTRATOR'S "PATTER"

"Good morning! You received a circular from the Domestic Medical Society? That is too bad, you should have had one! I'll take your name and address and have one mailed you free. Your name is what? Your initials are what? Your number is what?



IDENTIFICATION

Not Transferable

DOMESTIC MEDICAL SOCIETY
CONSULTING COUPON

Identification necessary when requested

This Coupon entitles____________________and entire family to the benefits and services of the Domestic Medical Society free of charge as enumerated above, if presented at office of Consulting Physicians within two years from date.

NORTH SIDE
DR. G. COHEN

SOUTH SIDE
DR. HARRY E. WALSH

S. JAMES MORRIS
PHYSICIAN AND SURGEON
1947 N. Western Avenue

L. A. GORHAM, O. D.
EYE SIGHT SPECIALIST
1947 Western Avenue

M. D. THAYER, M. D.

DENTISTS
DR. C. E. COULDING'S
PAINLESS DENTISTS
120 South State Street

EXAMINATION AND EXTRACTION FREE

Identification coupon in use about two years ago by the Chicago branch of the "Domestic Medical Society" in connection with the sale of "Domestic Medical Practice."

"Our object is to help stop the spread of contagious diseases. You know that there would not be any scarlet fever, diphtheria, or even consumption if people knew how to prevent them. Isn't that so? It requires one minute's explanation and costs you nothing. You can spare one minute, can't you? I'll just step in and explain it to you.

"We first take up contagious diseases. If Diphtheria, Scarlet Fever, Small Pox or Measles should come to your home you certainly would want to know what to do about it, and what the board of health requires you to do, wouldn't you?

"We show you here the Physician's Manikin painted especially for this work; it shows the location of all the organs of the human body, the back and front view of the heart, the lungs, the liver, the stomach, the kidneys, etc.

"You hear a great deal about appendicitis. There you see the Appendix. It is the most mysterious organ of the human body. Medical records tell us that more people have been killed by the operation than die from the disease itself.

"Our authority on this, has cured 95 per cent. of his patients by a local application of oils, such as petroleum or turpentine, applied over the area outlined by Capital A.

"Then you have in your own home treatment for 49 diseases by local application, such as Colds, Pneumonia, Neuralgia, Epilepsy, Dyspepsia, Kidney troubles, etc.

"These are all cured by Turpentine, Vinegar, Salt, Lemon, etc., remedies which you have in your own kitchen. The doctor prescribes all these in Latin, which confuses you and helps the druggist to get higher prices for his drugs. Isn't that so?

"Then we have the Plants, Vegetables, Fruits and Herbs. Celery cures Rheumatism, Lemon cures 21 different diseases, the Pumpkinseed removed the tapeworm, head, body and all.

"Did you ever have the Grippe? Do you know that one-half a teaspoonful of Cayenne pepper will cure the worst attack of Grippe in one night? Cayenne pepper also cures Scarlet Fever."

If the "demonstrator" has not been gently but firmly propelled down the front steps by the time he reaches this point, he discourses on the care of infants and the treatment of infant ailments as detailed in "Domestic Medical Practice." Then—we quote *verbatim*—he continues:

"We give you over 500 standard medical prescriptions in Latin and English, as prescribed by Physicians, showing you how you are overcharged by the druggist.

"For instance, the standard medical prescription for Cholera Morbus is: Piper, Sodium Chlorid, Cordialis Rubus Villos, Aqua Bulliens. This is nothing but pepper, common salt, blackberry brandy and boiling water, articles to be found in almost every kitchen, or which can be had from a grocery store for next to nothing, but, from a Doctor and in Latin, it will cost from $1.50 on to $2.50."

And the peroration:

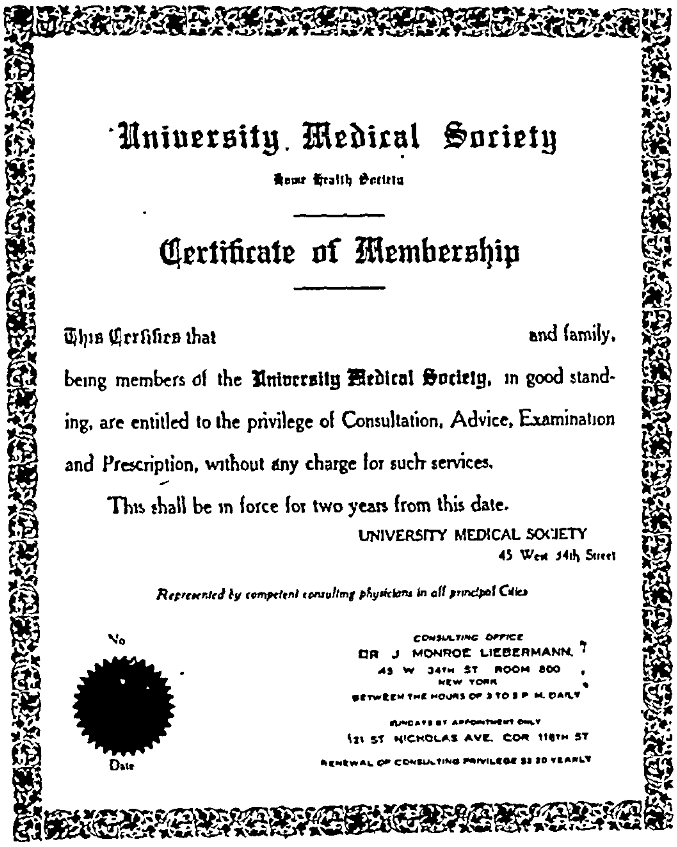
"It is complete in one large convenient volume of 1,570 pages, 42 departments, each of which is just as useful to you as the three or four I have shown you, and is bound just like this.

"It is placed in your home for three and one quarter cents a day, twenty five cents a week or one dollar a month for a period of ten months.

"Now, any one can afford a paltry quarter a week for a valuable work like this, don't you think so?

"Candidly and conscientiously, don't you think so? Of course you do; place your name here, please."

"Domestic Medical Practice," to which the preceding "talk" refers, was put on the market by a concern calling itself the "Domestic Medical Society." While located in Chicago its activities were by no means purely local, for we have had inquiries about it from Massachusetts to California.



University Medical Society

Home Health Society

Certificate of Membership

This Certifies that and family, being members of the University Medical Society, in good standing, are entitled to the privilege of Consultation, Advice, Examination and Prescription, without any charge for such services.

This shall be in force for two years from this date.

UNIVERSITY MEDICAL SOCIETY
45 West 34th Street

Represented by competent consulting physicians in all principal Cities

No

Date

CONSULTING OFFICE
DR J MONROE LIEBERMANN
45 W 34TH ST ROOM 800
NEW YORK
BETWEEN THE HOURS OF 3 TO 5 P M. DAILY

SUNDAYS BY APPOINTMENT ONLY
121 ST NICHOLAS AVE. COR 118TH ST

RENEWAL OF CONSULTING PRIVILEGE $3.50 YEARLY

Photographic facsimile (reduced) of the "Certificate of Membership" used by the "University Medical Society" ("Home Health Society") with headquarters at 45 W. 34th St., New York City.

AMERICAN HEALTH SOCIETY

A scheme that seems essentially similar is also operated by a Philadelphia concern which seems to go under such names as the "Historical Publishing Company," the "American Health Society," the "Home Health Society," the "University Health Society"—and possibly others.

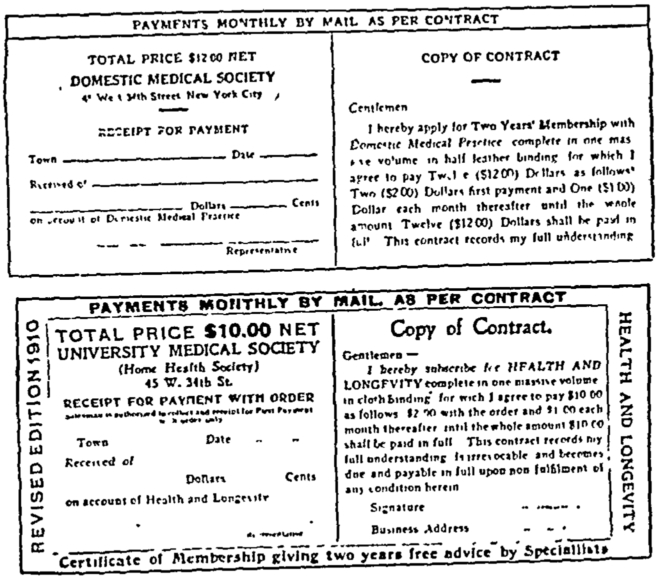
The "Historical Publishing Company" seems to have been a little too active in its home state for its own comfort. A Philadelphia paper during the past few weeks has recorded the arrest of one of the company's agents in Lebanon County, Pa. The agent, according to the newspaper report, offered for sale the usual "Library of Health" and those who paid $18 for the book were given "a certificate with a big red seal" which entitled the holder to receive treatment at the hands of the "Eminent Expert and Chief of Staff" of the "Home Health Society." Also, the enthusiastic agent seems to have given the inference that the "certificate" holders were entitled to write to Health Commissioner Samuel G. Dixon, who would diagnose their cases and send prescriptions. Here is where the agent made a mistake and his arrest followed an investigation by the officials of the state department of health. According to the same paper, the alleged "prominent specialist and chief of staff" named on the certificate was one B. Frank Scholl, M.D., of Philadelphia.

When the complaints against the company were heard before the deputy attorney-general of the state, it is alleged that the defendants asserted that they had sold one million of their publications! The company admitted that the various "health societies" under whose names it did business had no existence other than trade names. As a result the attorney general ordered the Historical Publishing Company, (1) to use only its charter name, (2) to discontinue using the names of the various "health societies," (3) to stop issuing "certificates" agreeing to treat people and (4) to cease issuing free prescriptions.

In the Middle West the "Historical Publishing Company" apparently operates as the "American Health Society" and is represented by the "Western Distributing Company," with offices in Chicago. The book sold by the Western Distributing Company is the "Library of Health," a pretentious volume of about 1,500 pages. The title page of the "Library of Health" bears the names of three physicians, B. F. Scholl, J. F. Little and F. E. Miller, while the frontispiece is a full page half-tone purporting to be a picture of Dr. B. F. Scholl. An interesting side-light on the methods used in advertising this book has been brought to our attention by Health Commissioner Ruhland of Milwaukee. The "Western Distributing Company" issued an eight page leaflet on scarlet fever under the title "Bulletin of the American Health Society, Publishers of Library of Health." The leaflet first reprints from a Milwaukee paper statements made by Commissioner Ruhland on the subject of scarlet fever. It then gives information of more or less value describing the symptoms and purporting to help the public differentiate between scarlet fever and diphtheria. It very properly declares that cases such as it describes should all be considered serious and a physician summoned, and it also informs the public that all cases of scarlet fever or other contagious disease must be reported.

The "Bulletin" closes with the statement that the information contained in it has been "selected" from the "Library of Health." It is, presumably, sent out as a means of allowing their "demonstrators" more easily to approach possible purchasers.

Aside from any inherent dishonesty that may or may not attach to the scheme of selling these various books and "certificates," the plan has certain fundamental fallacies. The book, at least in some instances, is over a quarter of a century old. Including, as some of the books do, scores of prescriptions, it will inevitably lead the purchaser to attempt self-treatment of conditions that may be dangerous not only to the individual but to the community. The bulk of the books —1,500 pages or more—is such that the reader either gets an ill-digested conception of their contents or will develop an unhealthy habit of physical introspection.



PAYMENTS MONTHLY BY MAIL AS PER CONTRACT

TOTAL PRICE $12 00 NET
DOMESTIC MEDICAL SOCIETY
45 West 34th Street New York City

RECEIPT FOR PAYMENT

Town ________ Date ________

Received of ________

________ Dollars ________ Cents

on account of Domestic Medical Practice

________ Representative

COPY OF CONTRACT

Gentlemen

I hereby apply for Two Years' Membership with *Domestic Medical Practice* complete in one massive volume in half leather binding for which I agree to pay Twelve ($12 00) Dollars as follows: Two ($2 00) Dollars first payment and One ($1 00) Dollar each month thereafter until the whole amount Twelve ($12 00) Dollars shall be paid in full. This contract records my full understanding

PAYMENTS MONTHLY BY MAIL, AS PER CONTRACT

REVISED EDITION 1910

TOTAL PRICE $10.00 NET
UNIVERSITY MEDICAL SOCIETY
(Home Health Society)
45 W. 34th St.

RECEIPT FOR PAYMENT WITH ORDER
Salesman is authorized to collect and receipt for First Payment with order only

Town Date

Received of

Dollars Cents

on account of Health and Longevity

Representative

Copy of Contract.

Gentlemen —

I hereby subscribe for HEALTH AND LONGEVITY complete in one massive volume in cloth binding for wich I agree to pay $10 00 as follows $2 00 with the order and $1 00 each month thereafter until the whole amount $10 00 shall be paid in full This contract records my full understanding is irrevocable and becomes due and payable in full upon non fulfilment of any condition herein

Signature

Business Address

HEALTH AND LONGEVITY

Certificate of Membership giving two years free advice by Specialists

Photographic facsimile (reduced) of the contract blanks signed by the purchasers of "Domestic Medical Practice" and "Health and Longevity," respectively. Notice that the addresses of both the "Domestic Medical Society" and "University Medical Society" ("Home Health Society") are the same.

Up-to-date books of one hundred or two hundred pages written by men of standing and dealing with principles of prevention rather than with details of treatment are of far greater value to the public in the preservation of health and can be and are sold at a legitimate price. It is the bulky pretentiousness of the "health books" together with the added inducement of alleged free medical service given as a premium that makes it possible for a price of ten, twelve or eighteen dollars to be asked and obtained. There is no legitimate excuse, either from the standpoint of economics or health preservation, for selling mediocre publications, with alleged medical service as a premium, at a price that is out of all proportion to the value received.

Correspondence

ABOLITION OF THE PATENTS ON SALVARSAN

To the Editor:—This letter is written to urge physicians and medical societies, individually and collectively, to exert all the influence they can bring to bear on Congress to abolish the patents on salvarsan, which, aside from causing enormous expense to the sick, have put very serious restrictions on the use of this necessary drug.

Now is the best opportunity we shall ever have to get rid of these patents. Our experience with salvarsan during the last two years has been almost intolerable. Salvarsan and its related products, during this time, have been obtainable only through the grace of one man, Mr. H. A. Metz, in New York City. The drug is covered, we understand, by all the protective privileges that can possibly be used in caring for the pecuniary interests of those owning proprietary remedies. The name is copyrighted; the drug itself is a patented product; and the processes of its manufacture are patented. Under these patents, the German owners and their American representative have made millions from the sale of the drug in America.

Although the facts are familiar to most physicians, it may be worth while to review the situation in regard to this drug that has developed during the war: First, Mr. Metz used his supply and what he could obtain from Germany in such manner as he saw fit. He distributed the drug to physicians, giving them such amounts as he thought they should have and limiting them in any way he pleased. We are not saying that he did not act wisely and in the best way he knew how or with public spirit, but at best he was a public-spirited and wise autocrat, dictating to the whole body of men who have the sickness among 100,000,000 people in their charge as to the supply of a drug that is at times essential. Next, when he was no longer able to supply the drug himself, he allowed the Dermatological Research Laboratory of Philadelphia to make it, under an agreement by which he could stop their manufacture of it immediately, whenever he saw fit. That laboratory, it may be said in passing, is not organized for profit, and their large profits from the manufacture of salvarsan during a short period have been dedicated to research in medicine. That institution, it may also be said, made a salvarsan which in the opinion of some competent men was less toxic than the commercial product from Germany. Finally, when the *Deutschland* succeeded in getting over here and brought a new supply of salvarsan, Mr. Metz immediately stopped the distribution of the Philadelphia salvarsan, and for the last several months we have been compelled to rely, as far as salvarsan is concerned, on such supplies as he has seen fit to furnish us. Sometimes, he has furnished it; sometimes he has not. It rests with him whether or not a physician gets a supply; and your patient or mine can get the salvarsan he needs or not, according to Mr. Metz' decision. The situation is as though the supply of quinin for this country was absolutely in one man's hands.

Recently, Mr. Metz has seen fit to send out a circular letter to the profession, in which he makes the explicit threat of exacting legal penalty from those who use any substitute for the patented article—this in spite of the fact that the new supply of salvarsan received from Germany, according to published reports by competent, disinterested men, has proved less free from danger than the salvarsan we got from Germany before the war or the salvarsan made in Philadelphia. In the same letter, Mr. Metz informs us that he is going to try to make it in this country, pretty soon. He is going to furnish it at the old price—a price which represents millions of dollars of profits annually from the American sale of the drug. Whether he is going to succeed or not in making a satisfactory article nobody knows; but we do know that if it were not for rights that rest in Germany and do not belong to Mr. Metz except through German title, we have persons in this country who could make a first-class salvarsan and who would be glad to sell it at from one-third to one-fourth the price that Mr. Metz wants for it and that we have been made to pay for it heretofore.

The question may well be raised of the moral right of profiting to the extent of great fortunes from patents on drugs of necessity to the sick. Certainly, it is abhorrent to the ethics of the medical profession. But, even if there be nothing wrong in this, it may be said in the case of salvarsan that the drug has already yielded profits amounting to millions of dollars, and every one interested in the ownership of the drug has already been well provided for. This doubtless applies to the Ehrlich family, and there is every reason to believe that his agency for the drug in this country has added greatly to Mr. Metz' large wealth; so that no injustice would be done any one by abolishing these patents and giving the sick, for the future, the benefit of the reduction in price, and providing assurance against further failure in supply of the drug.

The medical profession and the public should see to it that these patents are abolished. Physicians and medical societies should agitate the matter with the public and use their utmost influence with their senators and congressmen to get them to take action to abolish these patents. Individuals should take it up by letters and personally when possible. Medical societies should do the same. The following resolutions have recently been passed by the Chicago Medical Society and by the St. Louis Medical Society, and they are offered as an example of such resolutions:

Whereas, Salvarsan is a drug which is of vital importance to the protection of health and to the saving of life; and

Whereas, The patent rights conferred on salvarsan and its congeners have created a monopoly which has permitted a price to be placed on the drug which makes it unavailable to tens of thousands of indigent sick in this country; and

Whereas, The drug has hitherto been supplied to this country from foreign shores and the supply during the war has been uncertain, and insufficient; and

Whereas, The patents have prevented the preparation and distribution of the drug in this country by American laboratories; and

Whereas, The patents conferred are operating against the health interests and the public welfare of this country, therefore be it

Resolved, By the Chicago Medical Society, that Congress be earnestly urged to abolish the patents on salvarsan and its closely related products.

Copies of the resolution or notice of the action should be sent to the chairmen of the Committees on Patents of the House and of the Senate and to members of the House and Senate. Physicians are urged to write to their congressmen and senators asking legislation to bring about this action.

Senator Ollie James is chairman of the Senate Committee on Patents.

We may be sure that the representatives in this country of these German-owned patents will use every influence they can bring to bear to save the profits for themselves. We shall have to be up and doing, if the interests of the American people are to be taken care of in this matter.

County societies and all other societies are earnestly urged to give this matter immediate attention.

J. W. Vanderslice, M.D.,
J. H. Walsh, M.D.,
W. A. Pusey, M.D.,
Committee, Chicago Medical Society.

The following resolutions were unanimously adopted at the meeting of the St. Louis Medical Society, Saturday, April 7, 1917:

Whereas, Salvarsan is a drug which is of vital importance to the protection of health and to the saving of life, and

Whereas, The patent rights conferred on salvarsan and its congeners, have created a monopoly which has permitted a price to be placed on the drug which makes it unavailable to tens of thousands of indigent sick in this country, and

Whereas, The drug has hitherto been supplied to this country from foreign shores, and the supply during the war has been uncertain and insufficient, and

Whereas, The patents have prevented the preparation and distribution of the drug in this country by American laboratories, and

Whereas, the patents conferred are operating against the health interests and the public welfare of this country; therefore be it

Resolved, By the St. Louis Medical Society, in session assembled, that Congress be earnestly urged to abrogate or at least suspend the patents on salvarsan and its closely related products.

Martin F. Engman, M.D.,
Cyrus E. Burford, M.D.,
J. Curtis Lyter, M.D., St. Louis.

SOME FACTORS IN MILK SUPPLY

To the Editor:—In three recent issues of The Journal (Nov. 4, 1916, Jan. 27, 1917, and Feb. 3, 1917) appeared editorials dealing with different aspects of the question of milk production. Recent investigations into the modus operandi of the processes of anabolism have placed the unsolved problems of milk production in a clearer light and enable us to measure the extent of our proved knowledge. The dairy cattle of Germany have recently been subjected to an experiment in rationing on such a large scale as to make the results of interpretative importance despite the fact that controls were necessarily and obviously lacking. I venture, therefore, to present in a tentative manner the results of the abnormal rationing of the dairy cattle of Germany in their bearings on the problems of milk production as discussed in your editorials.

The proved facts in milk production, derived in part from dairy experience and in part from experimentation, are as follows:

1. The quality of the milk is determined by the breed. The milks of Jersey and Holstein herds vary sufficiently to permit classification by the chemist.

2. The quantity of milk varies with the breed and with families within the breed. High quantitative producers breed true, just as trotters and pacers breed true.

3. It is not possible to any material extent (certainly not to a commercial extent) to modify the quality of the milk (that is, the percentage of fat, sugar and protein) by modification of the diet.

4. The quantity can be increased to the maximum of the production of the particular individual or family solely through the supply of the nutrient ingredients in adequate amounts.

5. The milch cow may be regarded as a machine within a machine. The external machine (the metabolism of the cow) requires, let us say, 250 gm. of protein and 6,000 calories in carbohydrate and fat for maintenance. The machine within the machine (the milk secretion) requires the administration of an amount of protein corresponding in nitrogen to the total protein of the milk plus carbohydrate and fat in such amounts as to cover the fat and lactose content; for example, 1 kg. of protein plus carbohydrate and fat worth 16,000 calories.

6. The cow possesses no noteworthy power of synthesis of amino-acids. The ration must, therefore, contain proteins that are balanced and must contain in quantity (in excess of maintenance requirement) the protein corresponding to the total protein of the milk. Under the influence of the chemical impulse, especially early in lactation, a cow may compensate for unbalanced protein and deficient protein in the ration by robbing her own tissues quantitatively and qualitatively, just as the anadromous fishes build up milt and eggs through utilization of muscle. This power of substitution is, however, according to recent investigations, probably not of large extent, and is in any event fraught with danger to the animal. There is evidence suggesting that the milk production and the tissues of the cows have in some instances in Germany suffered as a result of continuous subsistence on unbalanced proteins.

7. Butter fat can be formed either from carbohydrate or from fat in the diet. In many dairies no fat is fed whatsoever and all the butter fat represents synthesis from carbohydrate. In some dairies protein is fed to such excess as to act as substrate for fat, a wasteful conversion, as 100 parts of protein yield, via sugar, only 30 parts of fat. That triglycerids in the food pass into the milk more or less unchanged is an established fact, known for carnivora as well. If an emaciated female dog is fattened rapidly on fat mutton, the body fat of the animal will present a melting point much closer to that of mutton tallow than to that of normal dog fat. If under such circumstances a litter is thrown, the fat of the milk will also present a high melting point.

8. The green vegetation of spring contains substances that act as stimuli to the milk secretion, other ingredients in the diet being constant.

Your editorials dealt with the relation of balanced and unbalanced protein to the anabolism of the proteins of the milk; with the question of the dependence of milk fat on food fat and body fat, and with the factors of nervous and chemical stimuli to lactation.

The blockade of Germany has exhibited one of its most destructive operations in the exclusion of concentrated feeding stuffs from the dairies of Germany. According to the data collected by German scientists, German dairy cattle received during the year 1913, from imported concentrates, protein and fat to the extent of some 700,000 and 300,000 tons, respectively. One of the most striking features of the agricultural situation of Germany was the disproportion between the number of cattle and the acreage devoted to pasture, rotation grasses and roughage. During the past twenty years the production of beef and dairy products has increased out of all proportion to increase in lands devoted to pasture, rotation grasses and hay. Each decade, therefore, the German producer of beef and dairy products depended more and more on imported concentrates. It is in this country the custom to feed to milch cows, in the form of grain concentrates largely, the protein required for milk production, leaving to carbohydrate almost entirely the rôle of covering the needs for lactose and fat. In Germany, however, it has become within recent years more and more the practice to substitute in part fat for carbohydrate in the intake, so that the large dairies of Germany were at the outset of the war directly dependent on imported concentrates not only for protein, but also to a surprising extent for fat. The tendency to feed fat in part, rather than carbohydrate solely, plus the required protein finds a direct analogue in human nutrition. The man who is doing a day's work requiring 3,000 or 4,000 calories will find no difficulty in covering his needs by the ingestion of carbohydrate alone plus the required protein for upkeep; but when increasingly larger amounts of work are done, up to 6,000 or more calories, the worker naturally turns to fat, because the bulk of a diet that is to furnish such large numbers of calories becomes burdensome, if the heat needs are to be covered by carbohydrate alone. From the standpoint of digestion it is wiser to cover the large caloric needs by a mixture of fat and carbohydrate than by carbohydrate alone; and although the alimentary tract of herbivora cannot be compared, from this point of view, directly with the alimentary tract of omnivora, yet in general the experience of the German dairies tended to show definitely that for large production it was not only practicable but advantageous to administer a portion of the carbonous feed in the form of fat.

The crop of 1915 was low in all feeding stuffs and particularly low in the fodders that contain largely carbohydrate. Calculation of the production of feeding stuffs in the German Empire for that year indicates that in terms of energy, the feeding stuffs of that year available were not in excess of 65 per cent. of the normal. In other words, the dairymen faced loss of protein through abolition of importation, loss of fat through abolition of importation, and a striking reduction in carbohydrate through failure of the roughage crops. In attempting to meet this situation they could compensate in part for the lack of protein by diverting to cattle-feed waste protein that previously went to the soil as fertilizer. They had, however, nothing to substitute for the fat previously imported, and they had little to take the place of the carbohydrate of which they had been deprived through crop failure. Lack of silage and low yield of fodder roots accentuated the stringency. Under these circumstances it was not surprising that the milk production of Germany during 1915-1916 fell to a level variously estimated at from 45 to 55 per cent. of the normal. The total milk production of Germany in the year 1916 was not larger than the amount that in peace time went to butter making alone. The sum total of this experience tends clearly to substantiate the view that unless the food intakes are balanced in every direction, or convertible, the total milk production falls.

Faith in the chemical (really biochemical) impulse as determining the production of milk during the early months of lactation was widely held in Germany, and was the basis for the belief that in the spring of 1916 the new flow of milk, aided by the green feed, would result in a large increase in milk production. These predictions and hopes were not fulfilled. The cattle came through the winter in very poor condition. When they calved in the spring, the cows were emaciated. When they were placed on the abundant green feed that did develop early in the spring, contrary to the expectations the excess feed went into the tissues of the cow (into the external machine) rather than into the milk production (the internal machine). One views here what really amounts to competition between the growth impulse and the milk secretion. Growth is largely dimensional, dimensional in the sense that the cells of an adult animal possess a certain size and contain a certain amount of protein in the form of protoplasm. If now these cells, from subnutrition, become depleted, they are, so to speak, returned to a state corresponding to adolescence. When nutrients to the extent of normal maintenance are again available, the dimensional growth impulse strives to utilize these nutrients for the restoration of the normal masses of the cells. That the biologic impulse of milk secretion is extremely strong is clear from many investigations, and has been made very obvious in recent studies in which it was shown that the calcium elimination of milk in forced milk production was so high as to be in excess of calcium assimilation of the animal's alimentary tract and was obtained in part from the body of the animal. Nevertheless, the experience in Germany indicated that when applied to a large group of animals, many of whom were confessedly nondescript and not of highly bred milk strains, the biochemical impulse did not result in an increase of milk production; instead, the animals repaired their lost tissues, just as in the ordinary beef types of cattle the impulse in the direction of fleshening is naturally stronger than in the direction of milk production. The quality of the milk under the varying conditions fluctuated surprisingly little. A lowered fat production was observed, at times to quite an extent; but otherwise the experiences of the dairies during the two extremely trying years indicated that the quality of milk was representative of the anabolism of the particular animal, family or breed and tended to be independent of the intake. Most consistent was the casein production. The falling-off in production that is prone to occur late in the period of lactation was exaggerated in undernourished animals.

In the editorial devoted to the relation of fat in the diet to fat in the milk, there was not sufficient segregation of the ingredients grouped under butter fat to make the points under discussion entirely clear. These ingredients may be divided into the triglycerids, the flavoring and coloring matters and the lower fatty acids. Apart from the direct transfer of certain flavoring and coloring matters from the diet to the milk, there can be no question that the mammary glands tend to stamp the milk so far as taste and color are concerned. This is most clearly indicated by the definite differences in the taste and color of the fat of the milk of cows, goats and sheep on the same rations. There is also no question of the fact that the content in lower fatty acids tends to be specific. On the other hand, the investigations quoted in your editorial are not sufficient to indicate that milch cows convert one triglycerid into another to any large extent. The appeal to the modern theory that fats are split in digestion does not concern the point at all, since that same theory predicates that they are resynthesized in the intestinal wall. There is evidence to the effect that the triglycerids of the thoracic duct are different from the triglycerids of the diet; but there is, of course, an uncontrollable variable in the experiment. It is also true that while altering the fat intake modifies the melting point of the butter fat of the animal, yet on the whole an increase tends to produce butter of a more or less constant melting point. The extent to which, for example, tristearin in the diet is converted into tripalmitin, or triolein into tristearin, has not been experimentally shown, nor is it to be calculated from any of the data at present available in the literature.

The development of goat dairies is being actively encouraged in Germany. This is due not directly to the fact that the browsing goat makes lesser claims than the grazing cow. It is due rather to the fact that the maintenance for the number of goats required to produce a unit of milk is lower than in the case of cows; the ratio of maintenance to milk production is more favorable.

Alonzo Englebert Taylor, M.D., Philadelphia.

VISUAL REQUIREMENTS OF MILITARY AVIATORS

To the Editor:—The article on this subject (The Journal, March 17, 1917, p. 841) is certainly a timely one; however, some questions have arisen in my mind during the reading of it.

1. Why make color blindness a reason for rejection? The writer points out that an air scout would not detect "red uniforms of soldiers from the surrounding green foliage, even in the most favorable conditions, if he is red-green blind." But may I ask: Where at the present time are red uniforms to be seen, outside of the parade grounds? As scout, the chief function is to take "large numbers of photographs of the enemy's position." What has color blindness to do with this? Many color-blind men know so well how to take advantage of secondary circumstances (shade, luster or luminosity) that their defect is never recognized except by careful examination.

2. As the first and chief requisite must be normal vision ($^{20}/_{20}$) for each eye uncorrected, I cannot see that "a cycloplegic should be used in all cases." This shows a serious incompetence. When an ophthalmologist (and we cannot expect any other medical man to do this most specific work) is unable to examine the iris reaction, or the presence of synechiae, or the vitreous for opacities, or the fundus for changes in young persons without a cycloplegic, when the vision is $^{20}/_{20}$, such a one ought never to receive the certificate from the self-constituted American board of hypercompetent examiners for the license to practice ophthalmology.

3. "Even with normal vision in each eye, the aviator must have normal binocular vision," etc. Will you kindly tell me what the value of binocular single vision (I suppose it is this function to which the writer refers) is at the height at which aviators usually take their soundings? How does the writer convince himself of the presence of binocular single vision? In what terms does he express his findings?

I think that all physicians are sufficiently interested in these fundamental questions to justify ventilation of the topic of the visual requirements for aviators.

Edmond Blaauw, M.D., Buffalo.

[The foregoing communication was referred to Dr. Small, who replies:]

To the Editor:—When this paper was read before the Chicago Ophthalmological Society, I stated that I was not presenting any particularly new facts, but that my chief purpose was to point out the unusual conditions arising in this new field in order to get suggestions or criticisms and thus be able to make this branch of our military service as efficient as possible. I therefore wish to thank Dr. Blaauw for his criticism and am perfectly willing to abide by the judgment of other oculists in regard to these or other points in this subject. I can only state my personal opinion on the three points he discusses:

1. Normal color sense is absolutely essential. The particular illustration used was simply to call attention to the

inability of this form of color-blind person to distinguish between red and green. Much important work is done at night; red and green are the two colors most frequently used in signal lights. I can easily conceive of most disastrous results from a pilot's inability even to see these lights at a little distance. Again, figures, letters or designs of various kinds are painted on the planes as distinguishing marks. Failure to recognize these quickly might have grave consequences. I see no reason why the duties of the air pilot require any less keen color perception than do the duties of the sea pilot.

2. It is not so very infrequent that we find a young man whose manifest refraction is $^{20}\!/_{20}$, but whose absolute refraction under a cycloplegic is as low as $^{20}\!/_{70}$. Such a man, engaged in this work, will probably show rapidly increasing symptoms of eye strain, if his ametropia remains uncorrected. With a record of his absolute refraction on file, a reexamination may determine his unfitness for continuing in this service. The fundus can be studied with much greater accuracy through the dilated pupil. My ophthalmoscopic technic may be faulty, but I confess my inability to get, for example, in a beginning retinitis pigmentosa, a satisfactory picture of the periphery of the fundus, without the aid of a mydriatic. It is absolutely impossible to detect the amount and extent of posterior synechiae, without artificially dilating the pupil.

3. An aviator, after being in the air for an hour or more, with his nerves under pretty high tension, being then obliged to make a rapid descent, would require a rather keen sense of perspective to avoid striking the ground with damaging force. I maintain that without binocular single vision, stereoscopic vision, or sense of perspective, is wanting. I make it a part of every routine examination to estimate and record the amount of adduction, abduction, and the muscle balance for distance and at 33 cm. using Stevenson's tangent method for the last, which also serves to determine the presence or absence of binocular single vision.

Charles P. Small, M.D., Chicago.

DUODENAL CULTURES IN TYPHOID FEVER

To the Editor:—In The Journal, March 10, 1917, p. 780, Dr. Durham, in his article on the isolation of the typhoid bacillus from duodenal contents, says, "To the best of my knowledge and information, this is the first time that duodenal contents, secured by the use of the duodenal tube, ever gave a positive *Bacillus typhosus* culture." I wish to call attention to my own article published in The Journal, Nov. 18, 1916, p. 1493. A. L. Garbat, M.D., New York.

REMOVAL OF URETERAL CALCULUS BY CYSTOSCOPIC METHOD

To the Editor:—In his article on this subject (The Journal, April 7, 1917, p. 1028), Dr. William S. Ehrich desires to know why the treatment of small ureteral calculi by operative cystoscopy and ureteral dilatation has not supplanted the open operation. The answer is that this more rational method of ureteral calculus removal has supplanted the open operation, and has been used for many years past by leading urologists throughout the country. Dr. Ehrich would certainly be aware of this fact had he reviewed the urologic literature of the past few years. An open operation is the exception today in the management of ureteral calculus.

H. W. E. Walther, M.D., New Orleans.

Medical Compounds in Madagascar.—The French customs [illegible] re[illegible]dical compounds imported into Madagascar [illegible] in a [illegible] duty of 20 per cent. ad valorem maximum [illegible]ence [illegible]minimum. Merchandise from the United [illegible] cow[illegible] the higher rate. Medical compounds not [illegible] result [illegible] armacopeia are prohibited. Wholesale [illegible] do not sell medicines or preparations [illegible] can be [illegible]ies and general stores on the island. [illegible] diet. In [illegible]direct by pharmacists in the leading [illegible] butter fa[illegible]

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

CITRIC ACID—SERGENT'S LINE—HUMIDITY

To the Editor:—Please favor me with answers to the following questions:

1. Does the ingestion of fruit acids, notably those of the citrus fruits, tend to decrease the alkalinity of the blood?
2. Do these fruits have a deleterious effect in nephritis, especially in chronic cardiorenal conditions?
3. What is their effect on the reaction of the urine?
4. What is the effect of sodium citrate, potassium citrate and potassium acetate on the alkalinity of the blood and urine?
5. Can you refer me to any recent literature on this subject?
6. What is Sergent's "white line" in suprarenal insufficiency?
7. Is there any practical method for humidifying the air in dwelling houses in winter?

Kindly do not use my name. F. A. B.

Answer.—1. The citrus fruits contain in their juices citric acid. Citric acid and its salts—potassium and sodium citrate—are oxidized in the body with the formation of carbonates. Hence they tend to increase the alkalinity of the blood.

2. It is not likely that these fruits, taken in moderation, would have a deleterious effect in nephritis. In general, it is not advisable to give diuretics in cardiovascular renal disease. Potassium citrate has a diuretic action. However, if an alkaline effect is needed, this drug may be given.

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5. The use of these drugs is described in practically all textbooks on pharmacology. We may refer you particularly to H. C. Wood: Pharmacology and Therapeutics, Edition 2, Philadelphia, J. B. Lippincott Company, 1916, p. 271; Useful Drugs, American Medical Association, 1916, pp. 112 and 113; Hatcher and Wilbert: The Pharmacology of Useful Drugs, 1915, pp. 417 and 418; Sollmann: A Manual of Pharmacology, Philadelphia, W. B. Saunders Company, 1917, p. 729.

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7. The use of humidifiers is discussed in "The Relation of Atmospheric Humidity to Health," editorial, The Journal, March 17, 1917, p. 852.

ALUM AND PHOSPHATE CONTENT OF BAKING POWDERS

To the Editor:—Please give me a report on Royal baking powder and on Dr. Price's baking powder as to the alum and phosphate content.

W. J. Avery, M.D., St. Louis.

Answer.—According to the analyses made by the North Dakota food department in 1913, neither Dr. Price's baking powder nor the Royal brand contains either alum or phosphate. They belong, instead, to what is known as the "cream of tartar" type of powders, that is, powders from which the carbon dioxid is set free by the action of potassium bitartrate (cream of tartar) and tartaric acid on sodium bicarbonate (baking soda). From the analyses referred to above, the North Dakota food department calculated the probable original composition for the powders analyzed. The formulas for the two powders mentioned were calculated to be approximately as follows:

	Baking Powder	
	Dr. Price's	Royal
Sodium bicarbonate (baking soda)	24	21
Potassium bitartrate (cream of tartar)	38	41
Free tartaric acid	6	5
Starch	29	28
Water (undetermined)	3	2

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Arkansas: Little Rock, May 8-9. Sec., Dr. T. J. Stout, Brinkley, Ark.

Arkansas, Eclectic: Little Rock May 8. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

Arkansas, Homeopathic: Little Rock, May 8. Sec., Dr. Scott C. Runnels, Little Rock.

Georgia: Atlanta and Augusta, May 31-June 2. Sec., Dr. C. T. Nolan, Marietta.

Hawaii: Honolulu, May 7-10. Chairman, Dr. R. W. Benz, 1141 Alakea St., Honolulu.

Illinois: Chicago, May 3-5. Sec., Dr. C. St. Clair Drake, Springfield.

Massachusetts: Boston, May 8-10. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

Nevada: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

New York: Albany, Buffalo, New York, and Syracuse, May 22-25. Sec., W. J. Denno, Education Bldg., Albany.

Nebraska May-June Report

Dr. H. B. Cummins, secretary of the Nebraska State Board of Health, reports the oral, practical and written examinations held at Lincoln, May 10-11 and June 8-9, 1916. The total number of subjects examined in was 12; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 40, all of whom passed. Thirteen candidates were granted reregistration licenses by examination. Eighteen candidates were licensed through reciprocity. The following colleges were represented:

College	PASSED	Year Grad.	Per Cent.
Rush Medical College		(1915)	84.2
John A. Creighton Med. College (1915) 83.9; (1916) 75, 76.4, 76.5, 77.1, 78, 78.4, 78.9, 79.2, 79.2, 80.1, 80.4, 80.4, 80.5, 80.9, 80.9, 81.1, 81.1, 81.4, 81.6, 82, 82.1, 82.4, 82.5, 82.5, 82.9, 83.1, 83.9, 84.1, 84.2, 84.4, 84.6, 84.7, 85.9, 86.5, 87.2, 88.1.			
Lincoln Medical College		(1910)	75.1

College	LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Medical College of Alabama		(1906)	Mississippi
Chicago Homeopathic Medical College		(1895)	Iowa
College of Physicians and Surgeons, Chicago		(1910)	Illinois
Northwestern University		(1911)	Illinois
Rush Medical College	(1889) Iowa; (1911, 2)	(1914)	Illinois
State University of Iowa, Coll. of Med.	(1886)	(1905)	Iowa
Tulane University of Louisiana		(1914)	Nevada
Johns Hopkins University		(1909)	Iowa
Ensworth-Central Med. Coll. of St. Joseph		(1906)	Kansas
St. Louis University		(1910, 2)	Missouri
Eclectic Medical College		(1902)	Ohio
Medico-Chirurgical College of Philadelphia		(1900)	Iowa
Universities of Nashville and Tennessee		(1911)	Tennessee

Illinois October Report

Dr. C. St. Clair Drake, secretary of the State Board of Health of Illinois, reports the written examination held at Chicago, Oct. 10-12, 1916. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 115, of whom 88 passed and 27 failed. Eight candidates did not complete the examination. The following colleges were represented:

College	PASSED	Year Grad.	Total No. Licensed
Howard University		(1914)	1
Bennett Medical College		(1915)	2
Chicago Coll. of Med. & Surg.	(1915, 2);	(1916, 31)	33
Chicago Hospital College of Medicine	(1915)	(1916)	2
Hahnemann Med. Coll. and Hosp. of Chicago		(1916)	1
Jenner Medical College		(1916)	2
Loyola University		(1916)	18
Northwestern University		(1916)	2
Rush Medical College	(1903) (1914)	(1916, 9)	11
University of Illinois		(1916)	6
Indiana University		(1916)	1
State University of Iowa Coll. of Med.	(1907)	(1916)	2
Johns Hopkins University		(1915)	1
Detroit College of Medicine		(1904)	1
University of Michigan Medical School		(1909)	1
St. Louis University		(1915)	1
University of Pennsylvania		(1903)	1
Vanderbilt University		(1916)	1
Medical College of Virginia		(1906)	1
	FAILED		
Bennett Medical College	(1910)	(1915, 2)	3
Chicago College of Medicine and Surgery	(1915)	(1916, 7)	8
Chicago Hospital College of Medicine	(1915, 2)	(1916, 2)	4
Hahnemann Medical College and Hospital of Chicago		(1915)	1
Loyola University		(1916)	3

College	Year Grad.	
Reliance Medical College	[illegible]	[illegible]
Hospital College of Medicine, Louisville	[illegible]	[illegible]
National University of Arts and Sciences	[illegible]	[illegible]
St. Louis College of Physicians and Surgeons	[illegible]	[illegible]
University of Pennsylvania	[illegible]	[illegible]
National University, Athens	(1884) [illegible]	[illegible]
Female Medical Institute, Kharkof	[illegible]	[illegible]

Porto Rico October Report

Dr. Quevedo Baez, secretary of the Porto Rico Board of Medical Examiners, reports the written examination held at San Juan, Oct. 3, 1916. The total number of subjects examined in was 9; total number of questions asked, [illegible]; percentage required to pass, 75. The total number of candidates examined was 29, of whom 21 passed, and 8 failed. The following collges were represented:

College	PASSED	[illegible]	[illegible]
George Washington University		[illegible]	[illegible]
Atlanta Medical College		[illegible]	[illegible]
Bennett Medical College		[illegible]	[illegible]
Chicago College of Medicine and Surgery (1916) [illegible]		[illegible]	[illegible]
Loyola University		[illegible]	[illegible]
University of Maryland (1916) 75.8, 77, 77.6, [illegible]			
Harvard University		[illegible]	[illegible]
University of Nebraska		[illegible]	[illegible]
Jefferson Medical College of Philadelphia		[illegible]	[illegible]
Medico-Chirurgical College of Philadelphia		[illegible]	[illegible]
Temple University		[illegible]	[illegible]
Medical College of Virginia		[illegible]	[illegible]
University of Santiago, Spain		[illegible]	[illegible]
	FAILED		
Chicago College of Medicine and Surgery		[illegible]	[illegible]
Loyola University (1915) 65.6; (1916) 66.6, [illegible]			[illegible]
University of Maryland		[illegible]	[illegible]
University of the City of New York		[illegible]	[illegible]

Missouri December Report

Dr. J. A. B. Adcock, secretary of the [illegible] of Health, reports the oral and written [illegible] at St. Louis, Dec. 11-13, 1916. The total [illegible] examined in was 14; total number of [illegible] percentage required to pass, 75. The [illegible] dates examined was 14, of whom 9 passed [illegible] candidates were granted reregistration [illegible] ing colleges were represented:

College	PASSED	[illegible]
Loyola University		[illegible]
University of Illinois		[illegible]
Harvard University		[illegible]
American Medical College		[illegible]
Ensworth Medical College		[illegible]
National University of Arts and Sciences		[illegible]
Meharry Medical College		[illegible]
	FAILED	
Chicago College of Medicine and Surgery		[illegible]
National University of Arts and Sciences		[illegible]
St. Louis College of Physicians and Surgeons		[illegible]
University of West Tennessee		[illegible]

Alabama January [illegible]

Dr. W. H. Sanders, chairman [illegible] of Health, reports the written [illegible] gomery, Jan. 9-12, 1917. The [illegible] ined in was 10; total num[illegible] centage required to pass, 75. [illegible] examined was 22, of whom [illegible] candidate was granted a [illegible] clause. The following colleges [illegible]

College		
University of Alabama	[illegible]	[illegible]
Atlanta Medical College	[illegible]	[illegible]
Tulane University of Louisiana	[illegible]	[illegible]
Johns Hopkins University	[illegible]	[illegible]
Washington University	[illegible]	[illegible]
University of Pennsylvania	[illegible]	[illegible]
University of Tennessee	[illegible]	[illegible]
Vanderbilt University	[illegible]	[illegible]
	LICENSED [illegible]	
Kentucky University	[illegible]	[illegible]

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Free tartaric acid	6	5
Starch	29	28
Water (undetermined)	3	2

the practice be of the tenets of a recognized church, and the court, instead of charging the jury as stated, should have left to the jury the question whether or not the defendant was in good faith practicing the tenets of such a church within the meaning of the statutory exception.

Misstatements of Physicians Ground for Relief from Releases

(Chicago, R. I. & P. Ry. Co. vs. Rogers (Okla.), 159 Pac. R. 1132)

The Supreme Court of Oklahoma, in affirming a judgment for $1,001 in favor of plaintiff Rogers for damages for a burn and injury to his right leg while he was in the service of the defendant company, for which he had signed a release, says that the plaintiff was advised by the defendant's claim agent that the physicians of the company had reported the injury as merely a skin wound, and that it was not permanent. He was advised by two physicians of the company that the injury was merely a skin wound, and not permanent. He was advised by one of those two physicians that he would have a good leg and would be able to perform labor to the extent and in the capacity he did prior to the injury. The plaintiff was a mere employee of the company. He had no knowledge of medical science. He could not judge of the effect of a burn as to its permanency or its temporary character. He relied on the statements of the company's physicians to the effect that he would have a good leg, and, believing and relying on such statements, executed the release in question. In such cases innocent misrepresentations made in good faith and under an honest belief at the time made that they are true, on the one hand, and relied and acted on in good faith and under an honest belief of their truth, on the other hand, as well as statements made which are intentionally false and relied on by the party executing a release, may equally be made the basis of relief from such releases.

Society Proceedings

COMING MEETINGS

American Medical Association, New York, June 4-8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am. Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 21-23.
Am. Climatological and Clin. Association, Lakewood, N. J., May 29-31.
American Dermatological Association, Cincinnati, May 24-26.
American Gastro-Enterological Assn., Atlantic City, April 30-May 1.
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28-30.
Am. Laryn., Rhin. and Otol. Society, Niagara Falls, Can., June 1-2.
Am. Medico-Psychological Association, New York, May 29-June 1.
American Neurological Association, Boston, May 21-23.
Am. Ophthalmological Society, Virginia Hot Springs, May 29-30.
American Orthopedic Association, Pittsburgh, May 31-June 1.
American Otological Society, Atlantic City, May 29-30.
American Pediatric Society, White Sulphur Springs, May 28-30.
American Proctologic Society, New York, June 4-5.
American Psychopathological Association, Boston, May 24.
American Radium Society, New York, June 4.
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31-June 2.
American Therapeutic Society, New York, June 1-2.
Arkansas Medical Society, Little Rock, May 1-3.
Association of American Physicians, Atlantic City, May 2-3.
Conference of State & Prov. Bds. of N. Amer., Washington, May 30-31.
Connecticut State Medical Society, New Haven, May 23-24.
Florida Medical Association, Atlantic Beach, May 18-19.
Illinois State Medical Society, Bloomington, May 8-10.
Iowa State Medical Society, Des Moines, May 9-11.
Kansas Medical Society, Salina, May 2-4.
Maine Medical Association, Portland, June 12-13.
Maryland Medical and Chirurgical Faculty, Baltimore, April 24-26.
Massachusetts Medical Society, Boston, June 12-13.
Mississippi State Medical Association, Jackson, May 8-9.
Missouri State Medical Association, Springfield, May 14-16.
Nat. Assn. for Study and Prev. of Tuberculosis, Cincinnati, May 9-11.
National Assn. for the Study of Epilepsy, Skillman, N. J., May 28-29.
Nebraska State Medical Association, Lincoln, May 8-10.
New Hampshire Medical Society, Concord, May 16.
New York State Medical Society, Utica, April 24-26.
North Dakota State Medical Association, New Rockford, May 9-10.
Ohio State Medical Association, Springfield, May 14-16.
Oklahoma State Medical Assn., Lawton-Medicine Park, May 8-10.
South Dakota State Medical Association, Yankton, May 28-30.
Texas State Medical Association, Dallas, May 8-10.
Washington State Medical Association, Spokane, June 17-19.
Wyoming State Medical Society, Casper, May 9.

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2. **Epidemiology of Bacillary Dysentery.**—Smillie reports the study of seventy-five cases occurring in Boston during the summers of 1915 and 1916. The nests of infection in certain portions of the south end, and in South Boston, are striking. Sanitary conditions are equally bad in the north end and west end, but the former neighborhoods are occupied largely by first generation Irish-Americans, and the latter by foreigners —Italians, Poles and Russian Jews. Most factors affecting the health of infants in both neighborhoods are the same, the same water, the same milk supply, the same temperature and humidity, and equal number of flies, etc. The only factor that is not common to both neighborhoods is food, for most foreign mothers nurse their babies, while many American mothers do not. One of the cases was a nursing baby. This child was nursed only at night and was fed condensed milk during the day. A study of the epidemiology of widely scattered and isolated cases, of which there were fifteen, showed that the only factor in common was a certain brand of condensed milk, although repeated examinations failed to disclose the dysentery bacillus in this milk. Nine cases were due to the use of ice cream cones. Twenty-seven cases were due to direct contact. Thus, though seventy-five cases were studied, the foci of infection of these cases were reduced to twenty-eight, and Smillie is convinced that more intensive study of the cases from unknown sources would have reduced the number of separate foci of infection still more. In every dirty, careless household visited, where the sick child remained more than one week, there resulted a contact care of bacillary dysentery. Smillie is of the opinion that bacillary dysentery is introduced into the community in the summer by a carrier, and once begun, other factors carry it on. Four babies developed bacillary dysentery in the wards of the hospital. Each child was admitted with quite a different diagnosis, and their stools were negative on entrance. Each developed the disease seven to ten days after admission, and in no instance did the child come from an infected home or neighborhood.

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American Journal of Public Health, Boston

March, VII, No. 3

4 Program of Public Health for Cities. W. C. Rucker, Washington, D. C.—p. 225.
5 Program of Public Health for Towns, Villages and Rural Communities. G. F. Ruediger, LaSalle, Ill.—p. 235.
6 Health Administration on District Plan. A. E. Shipley, New York. —p. 248.
7 Scientific Management and Its Relation to Health of Worker. R. A. Feiss, Cleveland.—p. 262.
8 Modern Chemical Industries and Public Health. F. E. Fronczak, Buffalo.—p. 268.

the practice be of the tenets of a recognized church, and the court, instead of charging the jury as stated, should have left to the jury the question whether or not the defendant was in good faith practicing the tenets of such a church within the meaning of the statutory exception.

Misstatements of Physicians Ground for Relief from Releases

(Chicago, R. I. & P. Ry Co. vs. Rogers (Okla.), 159 Pac. R. 1132)

The Supreme Court of Oklahoma, in affirming a judgment for $1,001 in favor of plaintiff Rogers for damages for a burn and injury to his right leg while he was in the service of the defendant company, for which he had signed a release, says that the plaintiff was advised by the defendant's claim agent that the physicians of the company had reported the injury as merely a skin wound, and that it was not permanent. He was advised by two physicians of the company that the injury was merely a skin wound, and not permanent. He was advised by one of those two physicians that he would have a good leg and would be able to perform labor to the extent and in the capacity he did prior to the injury. The plaintiff was a mere employee of the company. He had no knowledge of medical science. He could not judge of the effect of a burn as to its permanency or its temporary character. He relied on the statements of the company's physicians to the effect that he would have a good leg, and, believing and relying on such statements, executed the release in question In such cases innocent misrepresentations made in good faith and under an honest belief at the time made that they are true, on the one hand, and relied and acted on in good faith and under an honest belief of their truth, on the other hand, as well as statements made which are intentionally false and relied on by the party executing a release, may equally be made the basis of relief from such releases.

Society Proceedings

COMING MEETINGS

American Medical Association, New York, June 4 8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am Assn. of Genito Urinary Surgeons, Rochester, Minn , May 21-23.
Am. Climatological and Clin. Association, Lakewood, N. J., May 29 31.
American Dermatological Association, Cincinnati, May 24 26.
American Gastro Enterological Assn , Atlantic City, April 30 May 1.
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28 30.
Am. Laryn , Rhin. and Otol Society, Niagara Falls, Can , June 1 2.
Am. Medico-Psychological Association, New York, May 29 June 1.
American Neurological Association, Boston, May 21-23.
Am. Ophthalmological Society, Virginia Hot Springs, May 29 30.
American Orthopedic Association, Pittsburgh, May 31 June 1.
American Otological Society, Atlantic City, May 29 30.
American Pediatric Society, White Sulphur Springs, May 28 30.
American Proctologic Society, New York, June 4 5.
American Psychopathological Association, Boston, May 24.
American Radium Society, New York, June 4
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31 June 2.
American Therapeutic Society, New York, June 1-2.
Arkansas Medical Society, Little Rock, May 1 3.
Association of American Physicians, Atlantic City, May 2-3.
Conference of State & Prov. Bds. of N. Amer , Washington, May 30 31.
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4 Program of Public Health for Cities W. C. Rucker, Washington, D. C—p 225
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8 Modern Chemical Industries and Public Health. F. E. Fronczak, Buffalo.—p 268.

9 Munition Plant Poisons. A. Rice, Parlin, N. J.—p. 273.
10 Dangers Connected with Spray Method of Finishing and Decorating. R. P. Albaugh, Cleveland.—p. 279.
11 *Facts and Fallacies in Disinfection. H. C. Hamilton, Detroit.—p. 282.
12 Institutional Sewage Plants. C. F. Mebus, Philadelphia.—p. 296.
13 Refuse Disposal in Small Towns. G. W. Simons, Jr., Jacksonville, Fla.—p. 299.
14 Acupuncture; Best Method of Vaccination. H. W. Hill, London.—p. 301.

11. **Facts and Fallacies in Disinfection.**—A rather extensive experimental laboratory study of disinfectants made by Hamilton shows that formaldehyd, when used under conditions in which the gas acts in an aqueous solution, is an efficient disinfectant, probably the only generally applicable fumigant. Mercuric iodid combined with potassium iodid is an exceptionally valuable germicide for the skin and for disinfecting surgical instruments and vessels. Its germicidal value is 5,000 times as high as that of phenol. Lime water freshly slaked from good stone lime has high germicidal value, but its objectionable features both in itself and in its action on other disinfectants makes it use more or less detrimental. Soap can be considered valuable only as an aid to disinfection or as a vehicle for an active agent. Most disinfectants with the exception of mercuric potassium iodid add little to the efficiency of soap. Alcohol as commonly used, that is, on the skin previously washed with soap and water, is highly efficient in percentages of 30 or over. A coal tar disinfectant carefully standardized by one of the accepted methods is valuable in proportion to its phenol coefficient, and is less affected than some others by the factors which tend to inhibit the value of a germicide. Pine oil disinfectants and other special products require as careful standardization as the coal tar disinfectants. For safe use the dilution should not exceed a number representing the result of the phenol coefficient times the dilution of pure phenol which would be used with confidence under similar conditions. Certain of the anilin dyes give promise of practical value in wounds and as internal antiseptics because of having a selective action toward certain micro-organisms and because of their low toxicity. The old dependable germicides, mercuric chlorid, phenol, iodin, hydrogen peroxid, will never be displaced, but undoubtedly their field of usefulness will become more and more restricted.

American Review of Tuberculosis, Baltimore

March, I, No. 1

15 Various Classifications of Pulmonary Tuberculosis. W. L. Rathbun, New York.—p. 1.
16 *Chronic Nontuberculous Lung Infection. A. H. Garvin, H. W. Lyall and M. Morita, New York.—p. 16.
17 Serologic Studies in Tuberculosis. S. A. Petroff, New York.—p. 33.

16. **Chronic Nontuberculous Lung Infection.**—The material for this study consisted of nine cases of chronic nontuberculous lung infection of long standing, four years or more, and is of interest inasmuch as a careful history and physical examination had previously determined the diagnosis as tuberculosis. The disproof of the diagnosis of tuberculosis was justified after long study, comprising a review of the factors in the history, frequent physical examination, roentgenograms of the chest, and repeated bacteriologic study of the sputum. The principal differential diagnosis to be made is that from pulmonary tuberculosis. There will usually be observed a very striking disparity of these points in favor of chronic nontuberculous lung disease and against tuberculosis except at such times as acute exacerbations occur, when the differential diagnosis will not be possible and the diagnosis will be that of tuberculosis, because symptoms or signs, or both, strongly suggest it. Usually the duration of the disease is clinically longer, with less severity of effect on the patient, than would be expected if the disease were tuberculosis. Base lesions in tuberculosis are usually quite toxic and progressive. Base lesions of chronic nontuberculous type are rather nontoxic and nonprogressive. The general health appears to be much more satisfactory than would be expected if the patient were tuberculous. As regards location, 90 per cent. of all tuberculous lesions are located in the apices, or upper lobes of the chest, and but 10 per cent. in the lower lobes. In chronic nontuberculous lung infection, the reverse of this is true. The physical signs will be at considerable variance to what might be expected if the condition were tuberculous. Two extremes may be met. There are either a large number of rather moist râles and ronchi, with only moderate cough and expectoration, or very few or no physical signs in the presence of symptoms. The symptoms, particularly cough and expectoration, are usually more manifest than the signs. The differential diagnosis of bronchiectasis of extensive degree is not difficult. The essential treatment is posture. As the lesion is usually at the base of the lung, drainage by the inverted position is necessary in order to remove the mucopurulent sputum. Examination in various inverted positions will often determine the best posture for drainage. The experience of the patient may also be used to determine this. The patient is instructed to assume this posture and is advised to vary it as the result in lung drainage is indicated. Lung drainage should be continued for a period sufficient to cleanse the respiratory tract thoroughly. At least fifteen minutes four times a day is a minimum rule. Chronic nasal sinus infections are a frequent complication and usually require attention before postural treatment can be successfully carried out. It may be advisable to place the patient in the country for six months to a year.

Archives of Pediatrics, New York

March, XXXIV, No. 3

18 Nine Cases of Amaurotic Family Idiocy. J. H. McHenry, New York.—p. 161.
19 Suggested Improvement for Out-Patient Work with Children. S. McLean, New York.—p. 173.
20 Case of Tuberculosis Following Ritual Circumcision. M. S. Reuben, New York.—p. 186.
21 History of Pediatrics in New York. A. Jacobi, New York.—p. 191.
22 Diagnosis of Pyloric Stenosis and Pyloric Spasm by Duodenal Catheter. W. W. Howell, Boston.—p. 199.
23 Establishment of Department of Preventive Medicine in Hospital Treating Children. C. V. Dorwarth, Philadelphia.—p. 206.

Archives of Ophthalmology, New Rochelle, N. Y.

March, XLVI, No. 2

24 Case of Hypopituitarism, with Homonymous Hemianopsia (Suprasellar Cyst?), Completely Relieved by Glandular Treatment. C. A. Elsberg and E. F. Krug, New York.—p. 97.
25 Scleral Trephining in Detachment of Retina. J. Green, Jr., St. Louis.—p. 104.
26 Unusual Form of Superficial Corneal Opacity, Probably an Instance of Atypical Epithelial Dystrophy. W. C. Posey, Philadelphia.—p. 113.
27 Glaucoma Simplex without Perceptible Rise in Tension. H. S. Gradle, Chicago.—p. 117.
28 Mesothorium Treatment of Eye Diseases. N. J. Cuperus, Zwolle, Holland.—p. 126.
29 Epithelial New Formation at Corneal Limbus which Recurred for Five Years and was Finally Cured with Mesothorium. Koellner, Wurzburg.—p. 130.
30 Peripupillary Combined Cystotomy. Falchi, Pavia.—p. 135.
31 Case of Pituitary Body Disease and Results of Glandular Administration. G. E. deSchweinitz and H. W. How, Philadelphia.—p. 139.
32 Atrophying Conjunctivitis with Symblepharon. R. Kuemmell, Erlangen.—p. 147.
33 Dyspituitarism with Limitation of Visual Fields; Symptoms Disappearing Under Use of Internal Glandular Therapy, with Return of Visual Fields to Normal. W. Timme, New York.—p. 151.
34 Myopia Cases Coming to Massachusetts Charitable Eye and Ear Infirmary for First Time Between Jan. 1, 1915, and Jan. 1, 1916. H. Gage, Milwaukee, Wis.—p. 154.

Boston Medical and Surgical Journal

March 29, CLXXVI, No. 13

35 Care of Ambulatory Accident Case. H. G. Stetson, Greenfield.—p. 447.
36 Pain in Right Lower Quadrant. W. W. Townsend, Rutland, Vt.—p. 450.
37 Tumors of Spine and Cord; Report of Cases. W. J. Mixter, Boston.—p. 452.
38 *Gastric Ulcer Produced by Intravenous Injection of Staphylococcus Pyogenes. E. C. Steinharter, Cincinnati.—p. 461.
39 Diagnosis and Treatment of Gastric Ulcer. L. Fischbein, Boston.—p. 465.
40 Preparation of Vegetable Proteins for Anaphylactic Tests. R. P. Wodehouse and J. M. D. Olmsted, Boston.—p. 467.
41 Improved Blood Transfusion Tube. W. R. Morrison, Boston.—p. 468.

38. **Gastric Ulcer Produced by Injection of Staphylococcus Pyogenes.**—The organisms used by Steinharter were obtained

from two sources, namely, the blood of a patient with septicemia and one with an acutely inflamed appendix. The primary cultures in both cases were made in ascites dextrose broth, and yielded the staphylococcus in pure culture. An emulsion of the staphylococcus which was isolated from the appendix produced, on intravenous injection into rabbits, without any preliminary animal passage, stomach or appendiceal lesions in four out of five rabbits injected. On the other hand, the strain of staphylococcus obtained from the case of septicemia was not, when freshly isolated, of the proper grade of virulence to produce gastro-intestinal lesions when injected intravenously into animals, but later, after the organism had undergone preparatory cultivation in the functionating stomach wall of the rabbit, intravenous injection of it was then followed by the formation of gastric ulcer. The ulcers formed were in most cases single. They occurred invariably in the pyloric end of the stomach or duodenum. They varied in size from that of a pinhead to 5 by 7 mm. In some cases they were punched out, clean and well circumscribed, and in other cases, merely necrotic, bleeding areas. In some experiments the ulcer was the sole lesion, while in others it was associated with appendicitis, cholecystitis and arthritis.

Cleveland Medical Journal

February, XVI, No. 2

42 *Significance of Blood Platelets. R. I. Lee and G. R. Minot, Boston.—p. 65.
43 *Two Cases of Congenital Megacolon (Hirschsprung's Disease). C. A. Hamann, Cleveland.—p. 88.
44 *Case of Hodgkin's Disease Involving Stomach. S. P. Reimann, Cleveland.—p. 94.
45 Mechanical Devices in Treatment of Fractures of Long Bones. F. P. Corrigan, Cleveland.—p. 101.
46 Vaccine Treatment of Cerebrospinal Syphilis. O. P. Bigelow, Cleveland.—p. 103.
47 Vasomotor Axon Reflexes. J. B. Whelan, Cleveland.—p. 111.

42. **Significance of Blood Platelets.**—Lee and Minot make the deduction that the blood platelets play a very important rôle in initiating coagulation. Apparently blood uncontaminated by tissue juice will not clot as long as the blood platelets are intact. With sufficient alteration in the blood platelets or some portion of them, either from some physical change or from some substance given off by the blood platelets, the phenomenon known as coagulation begins and the development of that phenomenon is associated with further changes in the blood platelets, which then assist in the progress of coagulation. The active principle of coagulation residing in the platelets, while insoluble in salt solution, is soluble in strong saline solution or in distilled water. Such solutions of blood platelets assist in coagulation in the same manner as the blood platelets. Unlike most of the other active coagulating substances, the blood platelets can be subjected to considerable heat (boiling for fifteen minutes) without seriously affecting their activity in promoting coagulation. There are in particular two pathologic conditions which can be attributed to abnormalities of the platelets, namely, purpura hemorrhagic and hemophilia. Since purpura hemorrhagica is intimately associated with a diminution of platelets, and since all of the symptoms are due to platelet deficiency, the rational treatment consists of an attempt to supply the platelet defect. It frequently happens that tissue juice from any source, from fresh raw beef, for example, is of great value when applied locally to a bleeding mucous membrane in this condition. In typical hemophilia there is a hereditary defect in the blood platelets. The defect consists of a slow availability of the platelets for the purposes of coagulation. In hemophilia there are blood platelets in normal or often in slightly increased numbers. Unlike purpura hemorrhagica, in which the blood platelets are normal in their activity but greatly diminished in numbers, the blood platelets in hemophilia are normal in numbers but abnormal in their activity. The direct therapeutic indication in hemophilia is exactly that as in purpura hemorrhagica, namely, the supply of normal platelets. Likewise, locally, tissue juice, may be used with marked benefit.

43. **Congenital Megacolon.**—One of Hamann's patients, a boy of 15 years, had had no fecal evacuation for some two months prior to admission to the hospital. He had attacks of prostration at times, with rapid and feeble pulse. His appetite was fairly good; there was no pain, dyspnea or vomiting. A little over a month after a preliminary colostomy a second operation was done for the purpose of removing the enlarged part of the colon. The artificial anus was first closed, then the abdomen was opened through the former incision. The large intestine was divided at about the middle of the descending colon in which the intestine was about normal in size, and was then pulled out of the pelvis, that is, straightened as much as possible so as to "take up the slack," after which it was divided about 5 inches from the anus; at the lower point of division the bowel was 3 inches in diameter. The ends of the bowel were closed and a lateral anastomosis made on the left side of the rectum. The remaining portion of the large intestine was normal in caliber. Recovery after this operation was uninterrupted. The boy is now quite well and there are regular bowel movements, without the use of cathartics or enemas. The second patient was 2½ years of age. About 10 inches of the large intestine, comprising mainly the sigmoid flexure, were removed, the ends of the bowel closed and a lateral anastomosis made. The child died of peritonitis at the end of a week. In this case a marked enlargement of the bladder was also present.

44. **Hodgkin's Disease Involving Stomach.**—The type of involvement of the stomach in Reimann's case was that of endothelial hyperplasia, fibrosis and lymphocytic infiltration. The mucosa showed a small ulcerated area extending half way down to the muscularis mucosae with irregular steep edges and a small amount of débris on the surface. Fairly well localized to an area about 1 cm. across were seen the endothelial cells and lymphocytes streaming from the submucosa and muscularis, invading between the glands in a dense, closely packed, diffuse manner, compressing and distorting the architecture of the glands. Fibrosis was more evident in the submucosa and muscularis, in which it existed as fine diffuse fibrils and as more closely packed strands. The endothelial cells and lymphocytes replaced muscle bundles and invaded the lymphatic channels, following them very closely. The type of endothelial cell was the same as that of the lymph nodes, and the lymphocytes presented the usual picture. Very few of the giant cells were present and fewer eosinophils. The edges of the infiltration were quite sharp, and with the exception of short prolongations into the lymphatics channels, ended abruptly. On either side a normal stomach wall was seen. A search for bacilli in Gram-Weigert preparations resulted unsatisfactorily; a few broken rods were found which could not be identified as organisms. In spite of definite ulceration there were no symptoms referable to the stomach. The patient is the youngest of the cases of this type on record; he was 14 years of age.

Delaware State Medical Journal, Wilmington

December, 1916, VII, No. 13

48 Abdominal Cesarean Section. W. Wertenbaker, Wilmington.—p. 6.

Florida Medical Association Journal, Jacksonville

March, III, No. 9

49 Osteochondritis Deformans Juvenilis. E. Jelks, Jacksonville.—p. 257.
50 Treatment of Fractures of Humerus and Femur; Use of Autoplastic Graft. H. C. Dozier, Ocala.—p. 259.
51 Intestinal Obstruction; Its Diagnosis and Treatment; Report of Cases. J. A. Simmons, Arcadia.—p. 264.
52 Intestinal Obstruction from Gallstone; Report of Case. R. R. Sullivan, Lakeland.—p. 269.
53 Surgery as a Future. J. S. Helms, Tampa.—p. 270.
54 Senility. W. C. Chowning, New Smyrna.—p. 273.
55 Factors Influencing Death Rate in Surgical and Medical Appendicitis. R. R. Kime, Lakeland.—p. 274.

Georgia Medical Association Journal, Augusta

March, VI, No. 11

56 *Removal of Foreign Bodies from Globe by Electromagnet. F. P. Calhoun, Atlanta.—p. 213.
57 Hygiene in Prophylaxis and Treatment of Eye Diseases. C. Stockard, Atlanta.—p. 219.
58 Treatment of Concomitant Squint. A. B. Mason, Waycross.—p. 223.
59 Vincent's Fusiform Bacillus and Its Pathology. H. M. Lokey and A. W. Gould, Atlanta.—p. 227.

60 Importance of Ocular Examination in Diagnosis of Constitutional Disorders. E. S. Osborne, Savannah.—p. 231.
61 Dysmenorrhea and Its Nasal Relations. W. Lapat, Savannah.—p. 232.
62 Congenital Deaf Mutes Hearing and Conversing Over Long Distance Telephone. M. M. Stapler, Macon.—p. 234.

56. Abstracted in The Journal, May 6, 1916, p. 1491.

Journal of Bacteriology, Baltimore

March, II, No. 2

63 Diphtheroid Group of Organisms; Their Relation to Streptococci. R. R. Mellon, Boston.—p. 81. To be continued.
64 Colorimetric Determination of Hydrogen Ion Concentration and Its Applications in Bacteriology. W. M. Clark and H. A. Lubs, Washington, D. C.—p. 109.
65 Soil Flora Studies. H. J. Conn, Geneva, N. Y.—p. 137.
66 Studies in Nomenclature and Classification of Bacteria. R. E. Buchanan, Ames, Iowa.—p. 155.
67 Evolution and Relationship of Great Groups of Bacteria. I. J. Kligler, New York.—p. 165.
68 Study of Five Members of Septicemia Hemorrhagica; Their Action on Various Carbohydrates. A. M. Besemer, Ithaca, N. Y.—p. 177.
69 Large Numbers of Bact. Abortus Var. Lipolyticus Which May Be Found in Milk. A. C. Evans, Washington, D. C.—p. 185.
70 Creatinin Production by B. Coli and B. Typhi. H. J. Sears, San Francisco.—p. 187.

Journal of Cutaneous Diseases, Boston

March, XXXV, No. 3

71 *Nitrogen Metabolism of Two Cases of Eczema. J. F. Schamberg and G. W. Raiziss, Philadelphia.—p. 135.
72 Histopathology of Hyperidrosis Circumscripta. R. L. Sutton, Kansas City, Mo.—p. 154.
73 Use of Phenol in Dermatology. D. W. Montgomery, San Francisco.—p. 157.
74 Unusual Variety of Vitiligo (Leukoderma Acquisatum Centrifugum). J. B. Shelmire, Dallas, Texas.—p. 163.
75 Case of Lichen Planus Linearis Unilateralis. J. F. Auner, Des Moines, Iowa.—p. 166.
76 Hypertrichosis and Roentgen Ray. G. M. MacKee, New York.—p. 171.

71. **Nitrogen Metabolism of Eczema.**—Analysis of the results obtained by Schamberg and Raiziss in the metabolic study of two cases of eczema reveals the fact that two different clinical types of disease, which, in the present imperfect state of their knowledge of eczema, are grouped under this heading, exhibit quite a different picture with respect to their nitrogen metabolism. While both cases exhibit a tendency to retain the nitrogen of the ingested food as a result of, or preliminary to, the exfoliation of scales, they differ greatly in regard to the extent of nitrogen retention and its relationship to the protein loss in the scales. In one case the tendency to retain nitrogen is considerably less pronounced than in psoriasis. On a low nitrogen diet the patient was not in a position to maintain even a nitrogenous equilibrium, despite the fact that large amounts of nitrogen were steadily being lost in the exfoliated epithelium. Furthermore, on an ordinary nitrogen diet, the patient was not always able to retain sufficient nitrogen to cover wastage of protein lost in the scales. As a result, the patient lost large amounts of body protein. In psoriasis, on the other hand, during and after the outbreak of the eruption, much of the food nitrogen is retained and the patient remains ultimately in a positive nitrogenous balance. The second case presented a metabolic picture which is like that observed in psoriasis.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

March, XLV, No. 3

77 Pituitary Tumor with General Edema in Two Cases of Nanism (Paltauf and Pituitary Type). W. M. Kraus, New York.—p. 193.
78 Anomaly in Pyramidal Decussation. T. G. Inman, San Francisco. p. 214.
79 *Some Unusual Features of Jacksonian Epilepsy. S. Leopold and E. M. Auer, Philadelphia.—p. 220.
80 Case of Dementia Praecox Associated with Uncinariasis. E. D. Bondurant, Mobile, Ala.—p. 228.
81 Gold Sol Diagnostic Work *in Neurosyphilis* (Psychopathic Hospital, Boston). H. C. Solomon and E. E. Southard, Boston.—p. 230.
82 *Heredity in St. Vitus' Dance. C. W. Burr, Philadelphia.—p. 237.

79. **Unusual Features of Jacksonian Epilepsy.**—The authors cite a number of cases. In one there was an association of diphtheria with jacksonian epilepsy; in another there was association with unilateral sensory phenomena occurring in hydrocephalus; in a third association of thalamic pain, unilateral in character. Unilateral spasm of the face involving chiefly the muscles of the forehead and eyes without involvement of the opposite side has long been considered as a differential diagnostic point between spasm of peripheral and central origin. That such spasm can be of cortical origin is seen in a fourth case in which it is probable that the irritation was not sufficient intensity to cause bilateral involvement. A fifth case showed that general convulsions may appear as local convulsions, owing to the fact that part or the whole of one hemisphere is thrown out of action due to another cerebral lesion, as is seen frequently in the cases of infantile hemiplegia associated with epilepsy where the paralyzed limbs are in a state of spastic contracture and in which the general convulsion makes itself more apparent on the sound side. In a sixth case there occurred jacksonian convulsions from lesions distantly located from the motor cortex. That a jacksonian convulsion may be the initial symptom of a cerebral syphilis was strikingly illustrated in still another case. In another case of cerebral syphilis practically the only symptom present for more than four years was the jacksonian convulsion. The convulsions occurred at irregular intervals during this period. They showed at times the picture of a status epilepticus. There was no progression in the severity or frequency of the attack. The eyegrounds showed a choroiditis. The Wassermann of blood and spinal fluid was negative, but the globulin test was positive and there was a cell count of 20.

82. **Heredity in St. Vitus' Dance.**—Burr reports three cases of chorea occurring in one family, two of the patients being a niece and son, respectively, of the first patient. The family history disclosed the fact that seven cases had occurred in three generations. Only one of these was in a male, and this patient and his mother furnish the only instance of parent and son both being affected.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

March, IX, No. 6

83 *Effects of Strychnin, Cocain and Quinin on Vas Deferens. J. A. Waddell, Charlottesville, Va.—p. 279.
84 *Pharmacology of Ureter. Action of Hydrastin, Hydrastinin, Cotarnin, Emetin and Some Pyridin Derivatives; Further Aanalysis of Opium Action. D. I. Macht, Baltimore.—p. 287.
85 Device for Overcoming Clotting During Direct Blood Pressure Experiments. W. H. MacCraken and I. Werness, Detroit.—p. 305.
86 *Endermic Reactions. T. Sollmann and J. D. Pilcher, Cleveland.—p. 309.

83. **Effects of Strychnin on Vas Deferens.**—This paper deals with the effects of these drugs on the excised vas deferens and is, therefore, a study of the peripheral action of these agents. Strychnin in concentrations of from 1:30,000 to 1:6,000, produced rhythmic contractions and increased the tone in the quiescent organ, and increased the rate, amplitude, and tone in the rhythmically active. Cocain produced an increase in the rate, tone and amplitude of the rhythmically active organ, and a rise in tone and rhythmic activity were excited in the quiescent. The change in tone preceded that in rhythmicity. After very large doses, a rigor-like effect was observed. Quinin in concentrations of from 1:30,000 to 1:10,000, *on the quiescent organ* produced rhythmic contractions and in some cases moderately raised the tone; while on the rhythmically active it increased the rate, producing an intermittent, rhythmical condition in which periods of rapid movement with elevated tone alternated with ones of quiescence. The latent period was longer than after strychnin, and the effect of the drug was quickly abolished by placing fresh fluid in the bath. Sustained effect on tone was not observed.

84. **Pharmacology of Ureter.**—According to Macht, hydrastin and emetin exert a papaverin-like action on the ureter, inhibiting its contractions and relaxing its tonus. Hydrastinin and cotarnin exert a morphin-like action on the ureter, stimulating its contractions and increasing its tonus. Piperidin hydro-

chlorid and arecolin and coniin produce a stimulation of the ureteral contractions and an increase in its tonus. These observations with a large number of experiments on opium alkaloids lead Macht to a general hypothesis that the inhibitory action of the papaverin group of opium alkaloids on the ureter is due to their benzyl constituent, and that the stimulating action of the morphin group is due to their piperidin constituent.

86. **Endermic Reactions.**—In planning a study of the effects of iodism on the response to irritants Sollmann and Pilcher had recourse, among other measures, to the application of drugs to the scarified skin. Peculiar and striking reactions were produced. Sixty-two agents, including distilled water, were used. Summarizing the results noted it may be said that the application of drugs to the scarified or punctured skin produces local reactions, belonging to several distinct types. The most important of these are: urticarial wheals, vascular changes, smarting or pain. Only a few substances produce urticaria. The most typical are; histamin, peptone, morphin and its esters, atropin, calcium chlorid, urea and formaldehyd. A comparison of the substances that do and do not produce urticaria shows that this is not related to vasoconstriction or vasodilatation, or capillary paralysis, or to acidosis, or to various forms of inflammatory or sensory irritation, or to osmosis. In fact, it does not appear connected with any known chemical or pharmacologic relations; but is presumably due to a specific increase of the permeability of the capillaries. Certain of the substances that produce local urticaria are also known to be effective systemically. However, many substances that may produce cutaneous reactions on systemic administration fail to do so on local application. With these, the systemic reactions are probably indirect. Blanching is produced by certain vasoconstrictor agents (epinephrin, pituitary, hydrastin), but fails with others that act peripherally (barium, tyramin, etc.). Nitrites do not cause vasodilatation. Several distinct groups of sensory actions are distinguishable, such as the itching of the urticarial agents, the smarting and burning of the simple irritants; the formication of aconite, and the lancinating pain of veratrin.

Medical Record, New York

March 31, XCI, No. 13

87 Management of Chronic Dyspeptic. C. S. Fischer, New York.—p. 529.
88 Susceptibility to Furuncle. D. W. Montgomery and G. D. Culver, San Francisco.—p. 533.
89 Trichinosis Complicated by Encephalitis. L. Bloch and G. B. Hassin, Chicago.—p. 537.
90 Neuritis and Perineuritis with Reference to Newer Methods of Treatment. W. Martin, Atlantic City, N. J.—p 540.
91 Case of Persistent Priapism. A. L. Wolbarst, New York.—p. 542
92 War Surgery in Carpathians. B. F. Morowitz, New York.—p. 543

Military Surgeon, Washington, D. C.

April, XL, No. 4

93 Sir Thomas Lauder Brunton (1844-1916); An Apostle of Preparedness. F. H. Garrison—p. 369.
94 *Mental and Physical Activity with Reference to Nutrition and Blood Pressure. R. G. Heiner.—p. 378.
95 Civil Physicians and National Defense. H. Page.—p. 386.
96 Military Dogs. E. C. Jones.—p. 395.
97 Present Status of Artificially Treated Drinking Water in Field. W. Lyster.—p. 401.
98 Physical Examination of Large Bodies of Men. C. Willcox.—p. 411.
99 Occurrence of Endamebic Dysentery in Troops Serving in El Paso District from July, 1916, to December, 1916. C. F. Craig.—p. 423.

94. **Mental and Physical Activity and Blood Pressure.**—The facts brought out by Heiner are: (1) that exercise after meals raises the blood pressure and that activity, either mental or physical, after eating with the warding off of any inclination to sleep soon after meals, if continued over a period of several days will heighten the blood pressure considerably. This heightened blood pressure compensates for the need of extra circulation in order to supply the brain, muscles and digestive tract all at the same time. When the blood pressure is raised by this method of living the missing of a meal or sleeping after a meal will cause a fall in blood pressure, and, in the case in which sleeping after a meal occurs, there will be a lack of blood for the digestive organs and consequent failure in digestion with disagreeable symptoms on awakening; (2) when the heart, kidneys and digestive organs are sound, but some part of the body, as the lungs, is being destroyed by a chronic infection, as tuberculosis, which an increase of circulation will benefit, forced feeding carried out by exercise or stimulation after meals will give better results than forced feeding given without regard to time of exercise or stimulants; (3) living without food for a few days is not as unpleasant an experience as one would be led to believe by the symptoms of faintness and intense hunger which come on during the first few hours; for these not only pass away entirely, but there is a feeling of well being and desire to be active, and at the beginning of the second period of starvation there will be little if any of the disagreeable symptoms experienced at the start of the first period. During the starvation period practically everything is digested and absorbed from the alimentary tract and the digestive organs come to rest. During the rest and feeding period all the energies of the system are used in the process of digestion, and there will be very little of the food left undigested to putrefy and cause autointoxication.

New Orleans Medical and Surgical Journal

April, LXIX, No. 10.

100 Uncinariasis Investigation in Antimony Mines, Sinhwa, Hunan Province, China. W. S. Chow, China.—p. 672.
101 Treatment of Burns with Paraffin Mixtures. R. Matas, New Orleans.—p. 677.
102 Gastro-Enterology for General Practitioner. A. L. Levin, New Orleans.—p. 688.
103 Eighteen Months' Observation on Mental and Physical State of Children Following Removal of Tonsils and Adenoids. C. J. Bloom, New Orleans.—p. 695.
104 Early Case of Leprosy. P. L. Querens, Preston, Cuba.—p. 706.
105 *Appendectomy via Inguinal Canal. J. T. Nix, Jr., New Orleans.—p. 709.

105. **Appendectomy via Inguinal Canal.**—Nix claims that while in the cadaver, the appendix is nearest McBurney's point, in life the healthy appendix is always external and below, and in appendicitis, the vermiform process lies near the internal abdominal ring. Therefore he removes the appendix via the inguinal canal. Briefly, the technic is as follows: Make an incision ½ to 1 inch in length over the inguinal canal, the lower end being about 1 inch from the right pubic spine. Separate the fibers of the external oblique, but leave the ring intact. Retract the divided aponeurosis. The strong fibers of the conjoined tendon are separated as in the gridiron technic Retracting the divided tendon exposes a little pad of fat which protects the internal abdominal ring and separates the peritoneum at this point from the abdominal wall. By retracting upward with a small curved forceps the peritoneum is caught and divided with scissors, thereby opening the abdominal cavity. The lower border of the proximal colon can be seen through the incision. With very little difficulty the base of the vermiform process is reached and the appendix delivered into the opening. If it is retrocecal and adherent, delivery is impossible, and the retrograde subperitoneal enucleation can be easily performed. A single suture closes the incision. The operation is done under local anesthesia. Fifty-one patients have been operated on by Nix by this technic during the past year.

New York Medical Journal

March 31, CV, No. 13

106 Stuttering Relieved by Reversal of Manual Dexterity. J. H. Claiborne, New York.—p. 577.
107 Treatment of Abortion. G. L. Brodhead, New York.—p. 581.
108 Frequency and Significance of Dysfunction of Internal Secretory System in Feebleminded. C. P. McCord, Detroit, and H. A. Haynes, Lapeer, Mich.—p. 583.
109 Incompetency of Ileocecal Valve, Complication of Gastric Ulcer. L. G. Cole and J. P. Hoguet, New York.—p. 588.
110 Clinical Employment of Porcelain Filter. W. J. McGurn, Boston. p. 590.
111 Blood Pressure in Clinical Medicine. M. Schulman, New York.—p. 592.
112 Ear and General Practitioner. L. Fisher and I. H. Jones, Philadelphia.—p. 597.
113 Abdominal Cesarean Section for Toxemia of Pregnancy. T. H. Cherry, New York.—p. 600.
114 Impotence. B. P. Thom, New York.—p. 601.

Public Health Journal Toronto

March, VIII, No. 3

115 Value of Milk Depots. J. Tessier, Quebec.—p. 63.
116 Meningococcus Meningitis. J. G. Fitzgerald, Toronto.—p. 67.
117 Modern Conceptions of Fumigation After Communicable Diseases. F. Adams, Toronto.—p. 74.
118 Economic Value of Preventive Medicine. J. O. McCarthy, Toronto.—p. 78.

Psychiatric Bulletin, Utica, N. Y.

January, II, N. S., No. 1

119 Experimental Pathology of Central Nervous System Studied with Vital Azo Dyes. J. T. MacCurdy, New York.—p. 1.
120 *Clinical Studies in Epilepsy. L. P. Clark, New York.—p. 21.

120. **Studies in Epilepsy.**—The results of Clark's clinical study of essential epilepsy are briefly as follows: There exists a more or less definite type of constitutional makeup in epileptics. The essential defects of instincts are egocentricity, supersensitiveness, an emotional poverty, and an inherent defect of adaptability to normal social life in its broadest significance. The main defect is an inheritable one. This makeup is the primary or original mental endowment of the potentially epileptic individual. It is accentuated and made the more obvious by the further advance of the disease only when seizures develop. It is then often spoken of as the "mental stigma" of the disease. The attacks are not solely responsible for epileptic deterioration, but the seizures are themselves symptoms and exhibitions of the deteriorating disorders. The seizures do not always indicate the progress and degree of deterioration in any given case; that is, the number and severity of fits in a given case may not be an index to the amount of deterioration, nor may one postulate the severity of seizure reaction in a particular case by the type of deterioration.

The precipitating mental factors that often seem to bring about epileptic reactions in a potential epileptic are types of stress and annoyance, causing a loss of spontaneous interest, and an intensive regression to day-dreaming, lethargies and somnolence. The attack occurs at the final break of a too severe tension, and psychologically may be viewed as an intense reaction away from the intolerable irritation, a regression to a primitive mentality comparable to that of infancy or intra-uterine life. The therapeutic suggestions for a mental therapy in essential epilepsy would be to overcome, by proper training and education, the earliest beginnings of epileptic reactions in childhood. More particularly should the training concern itself with the eradication, so far as possible, of the defective instincts shown in egocentricity, supersensitiveness and rigidity of adaptation to the home and community. Even though many epileptics may be quite deteriorated, it is still often possible to train back their once discarded mental interest and thus restore much of their emotional and mental dilapidation. A series of arrested cases of frankly pronounced epilepsies are cited to show the mental mechanism by which arrests have been brought about.

South Carolina Medical Association Journal, Greenville

March, XIII, No. 3

121 Venereal Prophylaxis. M. H. Wyman, Columbia.—p. 488.

Southwest Journal of Medicine and Surgery, El Reno, Okla.

March, XXV, No. 3

122 Fractures of Long Bones. F. H. Clark, El Reno.—p. 65.
123 New Sterilization Operation on Female Tubes. A. L. Blesh, Oklahoma City.—p. 73.
124 Transverse Incision in Appendix Operations. H. L. Charles, Atchison, Kan.—p. 74.
125 Hemorrhoidectomy. J. M. Cooper, Oklahoma City.—p. 79.
126 Excessive Absorption of Fat of Orbit After Enucleation of Eye; Its Cause and Prevention. J. H. Thompson, Kansas City, Mo.—p. 81.
127 When to Operate in Disease of Biliary Tract. J. G. Sheldon, Kansas City, Mo.—p. 84.
128 Malignant Growths of Face. D. W. Goldstein, Fort Smith, Ark.—p. 85.

Vermont Medicine, Rutland

March, II, No. 3

129 Sinuses and Fistulae: Importance of Their Careful Exploration and Resultant Discoveries. G. R. Anderson, Brattleboro.—p. 57.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 10, I, No. 2932

1 *Treatment of Gunshot Wounds of Abdomen. A. L. Lockwood, C. M. Kennedy, R. B. Macfie and S. F. A. Charles.—p. 317.
2 *Three Hundred Gunshot Wounds of Abdomen. J. Fraser and H. Drummond.—p. 321.
3 Abdominal Injuries in Casualty Clearing Station. A. Don.—p. 330.
4 Indian Operation of Couching for Cataract. R. H. Elliot.—p. 334.

1. **Treatment of Gunshot Wounds of Abdomen.**—The conclusions drawn by the authors from observation of 356 cases with operation and 144 not operated on are that wounds of the large vessels to the liver, kidney and spleen are fatal before they can come to operation. Wounds involving the pancreas are seldom seen on the operating table, by reason, perhaps, of the contiguity of the organ to large vessels; only one case was seen by the authors. In that a foreign body was lodged in the tail of the pancreas. Anteroposterior wounds, especially in the epigastrium, are least dangerous, and wounds from side to side, especially low down, are dangerous. Wounds of solid viscera are not so dangerous as those of hollow viscera. Patients who come to operation with a herniated loop of bowel exposed do badly, especially if much bowel is lying exposed; the same is true when the stomach is partially herniated. Wounds of the stomach, colon, and especially the small intestine, require exploration, but in posterior wounds involving the colon the greatest care should be taken not to convert a retroperitoneal condition into an intraperitoneal one. Wounds of the liver and kidney should be determined as such only, and then treated expectantly, doing no more than exploring and cleaning up the track, and not that if probably a through and through wound produced by an undistorted rifle bullet or shrapnel ball. Avoid resection. End-to-end anastomosis is preferable to lateral when resection is essential. Wounds of the diaphragm are not necessarily fatal, nor even to be greatly feared. Careful repair gives excellent results. Multiple drainage tubes are rarely necessary, and always to be avoided if possible. Abdominal lavage is a dangerous practice. Never leave free, unprotected gauze in the abdomen. Paul's tube should be relegated to the museum, except in very rare cases. Speed in operating is essential, not only for the benefit of the patient, but because of the demands of scores of less vitally wounded men requiring attention during an active offensive. Resection for fecal fistula is better done late. The results quoted in this article are proof that abdominal surgery is at least as profitable in a military sense as the surgery of compound fractures of the femur, skull, etc.; the patients who recover make a rapid and complete recovery and become a satisfactory military asset sooner than the men who have been disabled by compound fractures of the skull, etc.

2. Id.—The authors are convinced that, in the the vast majority of cases of penetrating wounds of the abdomen, operative measures offer the best chance of success. They qualify the statement by excluding from the category uncomplicated wounds of the liver and certain wounds of the kidney and spleen. When the wound affects the hollow viscera of the abdomen it is only as the rarest exception that a spontaneous recovery occurs. When these patients arrive in the hospital they are almost universally in a state of intense collapse. The authors have therefore found it advisable to wait for a period of from one to two hours, until the increased shock of the journey has subsided. To this rule they make one exception, those cases which show evidences of rapid or progressive hemorrhage; in such cases the risks attendant on immediate operation are undertaken. Occasionally these patients arrive in the hospital having been very heavily dosed with morphin, which greatly militates against their eventual recovery; very rarely should the amount of half a grain be exceeded. During the operati[illegible]y precaution is taken to minimize the degree of [illegible] Immediately before the operation commences th[illegible]ministration of subcutaneous saline is begun, and it is continued throughout the operation:

3 to 4 pints of fluid are frequently given in this way. They have employed closed ether anesthesia and have also made great use of the method of warmed ether administration, using the apparatus supplied by Mayer and Meltzer. During the past four months the authors have had considerable opportunity for using ether intratracheal anesthesia. In surgery of the upper abdomen they have found it very pleasant to work with, but do not favor it as a general routine in abdominal surgery. There is a type of case which is, they believe, suitable for intravenous ether anesthesia, namely, patients who are obviously very collapsed, and yet who demand urgent operation.

Edinburgh Medical Journal

March, XVIII, No. 3

5 Grafting or Transplantation of Tissues. A. Thomson.—p. 169.
6 *Incidence of Bovine Infection of Tuberculosis in Children. C. Y. Wang.—p. 178.
7 Pathology of So-Called Sprains of Ankle. E. F. Cyriax.—p. 196.
8 Acute Intestinal Obstruction. A. Miles.—p. 200
9 Case of Violent Screaming and Photophobia Caused by Dentition. J. Thomson.—p. 203.
10 Two Cases of Congenital Symmetrical Perforation of Parietal Bones. D. M. Greig.—p. 205.

6. **Bovine Infection of Tuberculosis in Children.**—A bacteriologic investigation into 281 cases of various clinical forms of tuberculosis in Edinburgh conducted by various workers has resulted in the isolation of the bovine tubercle bacilli in 80 out of 102 patients (78.4 per cent.) under the age of 5 years; in 45 out of 64 patients (70.3 per cent.) between 5 and 16 years, and in 9 out of 115 patients (7.8 per cent.) above 16 years. Abdominal tuberculosis and tuberculous meningitis together are responsible for about 90 per cent. of the summed mortality from tuberculosis in children under 1 year, and about 75 per cent. in children between 1 and 5 years. The material from 9 children dead from these two diseases was examined bacteriologically, and from 6 the bovine type of tubercle bacillus was isolated. A large percentage of children in Edinburgh are fed wholly or partly on cow's milk, and in a great number of instances the milk is consumed raw. These two incidents, together with the high percentage of tuberculous cow's milk, give an explanation of the prevalence of abdominal tuberculosis in Edinburgh, and, further would account for the infection in the six cases of abdominal tuberculosis and tuberculous meningitis from which bovine tubercle bacilli were obtained. Children who were bottle fed on raw cow's milk, and also those fed on boiled cow's milk, were tested with tuberculin; it was found that 37.5 per cent. of the first group reacted, as against 15.4 per cent. of the second group. If the reaction be accepted as an indication of the presence of an infection in the body, the result, in a measure, affords corroboration of the bacteriologic findings.

Journal of Tropical Medicine and Hygiene, London

March 1, XX, No. 5

11 Prophylaxis in Bilharziasis. F. G. Cawston.—p. 49.

Lancet, London

March 10, I, No. 4880

12 Indian Operation of Couching for Cataract. R. H. Elliot.—p. 361.
13 Agglutination Curve and Its Importance in Diagnosis of Typhoid and Paratyphoid in Inoculated Persons. G. Dreyer and A. C. Inman.—p. 365.
14 *Simple Ulcer of Esophagus. J. B. Christopherson.—p. 369.
15 Chronic Empyema; Value of Decortication of Lung. W. H. Battle.—p. 371.
16 Repair of Large Bony Defects in Skull by Means of Metal Plate. C. Noon.—p. 373.
17 Case of Acute Osteomyelitis of Spine. L. P. Gould.—p. 374.
18 Closure of Colotomy Openings Performed for Wounds of Rectum. P. Lockhart-Mummery.—p. 376.
19 Use of Bismuth Iodoform Paraffin Paste Following Operation of Bone Grafting. H. S. Brander.—p. 377.
20 Suturing of Fractured Bones by Absorbable Ligatures. K. H. Digby.—p. 378.
21 Use of Phylacogen in Puerperal Sepsis. J. H. Reynolds.—p. 378.

14. **Fatal Hemorrhage in Ulcer of Esophagus.**—A case of fatal hematemesis is reported by Christopherson in a man aged 36, which occurred in July, 1916, at Khartoum, and it was due to an ulcer of the esophagus perforating the descending part of the arch of the aorta. The patient consulted a medical man because he had, he thought, something in the throat, and, as he had first noticed it after dinner on the previous evening when he had partaken of a dish of soft fish, he thought that he might have a fish-bone lodging in his throat. There being no clinical evidence of fish-bone or foreign body, he was put to bed and given expectant treatment. His symptoms were as follows: He felt as if there was "something in the chest"; he felt it when he swallowed, more especially when he swallowed "nothing" and also when he drew a deep breath. He located this sensation, which was more discomfort than pain, inside the chest behind the sternum, at a place which would correspond to the level where the ulcer was eventually found. He also had some pain behind, between the shoulder blades. There was nothing to be seen in the throat, no physical signs of anything amiss in the chest, and, in fact, the only symptoms indicating that there was anything wrong were a rise of temperature to 100 F., a coated tongue, and discomfort, sometimes amounting to a little pain, on swallowing or drawing a deep breath. Seven days later he had a large hemorrhage, and one day after this the fatal hemorrhage occurred. At the necropsy it was found that the hemorrhage came from an esophageal ulcer which had become adherent to the descending part of the arch of the aorta, in the neighborhood of the bifurcation of the trachea and which had penetrated the arterial wall. There were two other ulcers in the esophagus, both situated at the cardiac end just within the esophagus, one of which had healed with a cicatrix, and the other, a larger oval one, in the process of healing.

Medical Journal of Australia, Sydney

February 17, I, No. 7

22 *Case of Friedreich's Disease. W. F. Litchfield, O. Latham and A. W. Campbell.—p. 135.
23 Cirrhosis of Hemochromatosis or Bronzed Diabetes. J. C. Verco.—p. 140.

February 24, No. 8

24 Hints on Life Assurance. J. C. Verco.—p. 155.
25 Simple Inhaler. L. W. Bickle.—p. 159.
26 Ulceromembranous Stomatitis. H. S. Marsh.—p. 160.

22. **Friedreich's Disease.**—The microscopic examination of the brain and spinal cord in this case showed a relatively old sclerosis affecting parts of the posterior tracts, in which the interstitial tissue had assumed an unusual type, resembling that found in disseminated sclerosis. An irregular but less marked sclerosis, of considerable duration, was also present in the lateral regions of the cord. This sclerosis involved areas which do not correspond to sharply defined tracts, and was associated with a much more recent degeneration, revealed by Marchi's method of staining. These changes could be traced beyond the medulla, and there were faint indications of them in the cerebrum. There were no marked changes in the pia-arachnoid, blood vessels or lymph glands of the cord or brain. Moreover, there was a normal condition of the nerve cells, save a few in Clarke's column and the large cells in the postcentral gyrus, as well as a few in the posterior spinal ganglia. A gross atrophy of the cerebellum was not found and the dentate nuclei, the olives and red nuclei were quite normal. The changes described bear a certain pathologic resemblance to Gower's ataxic paraplegia, especially in the escape of the posterior root zones and ventral fields.

Archives des Maladies du Cœur, etc., Paris

February, X, No. 2, pp. 49-96

27 *Variations in the Heart Rhythm and Arterial Blood Pressure with Change of Position, Effort and Fatigue, Considered from Standpoint of Aptitude for Military Service. C. Laubry and P. Lidy.—p. 49.
28 *Effects on the Heart Rhythm of Severing the Cervical Spinal Cord. (Effets de la section de la moelle cervicale sur le rythme cardiaque.) M. Petzetakis.—p. 66.
29 *Action of Periarterial Sympathectomy on the Peripheral Circulation. R. Leriche and J. Heitz.—p. 79.

27. **Test Variations in Heart Rhythm and Blood Pressure.**—Laubry and Lidy state that examining men for fitness for military duty is throwing light on the reserve powers of the heart. They relate here the results of numerous tests, first

describing the findings in twenty young soldiers with apparently sound cardiovascular apparatus. They compare them with those from numbers of young men with various heart and vascular affections or during extreme fatigue or during exercise and after changes of position. Curves are given for better comparison. Among the conclusions drawn is that the test variations in rhythm in the normal are within such a wide range that an increase or decrease in the heart beat or the lack of any change or even a delay of three or four minutes before return to the previous condition cannot be regarded as indicating pathologic conditions under change from the erect to the reclining position or vice versa, and running 100 meters with the gymnasium step, followed by reclining. But pathologic conditions may be surmised if the delay before return to the normal rhythm is longer than three or four minutes. At the same time they are unable to say whether the abnormal findings are due to the weakness of the heart itself or to nervous influences. If the same findings are obtained on repetition of the test at considerable intervals, the decision is against the man's being fit for active service. No diagnostic deductions could be drawn from the tests of the blood pressure; the responses were practically the same in the healthy and in those with known heart disease. The blood pressure was examined at the same time as the heart rhythm and again after the man had flexed the trunk on the pelvis twenty times. They add that this negative conclusion is not surprising when we take into consideration the multiplicity of factors, mechanical, nervous, cardiac and vasomotor which cooperate in influencing the blood pressure. The sphygmomanometer findings may prove misleading unless supplemented by watching over the case and general condition, as a man with hyperthyroidism or polycythemia might give a normal response at a single sphygmomanometer reading.

28. **Influence on Heart Rhythm of Severing the Cervical Spinal Cord.**—Petzetakis reports experiences on dogs which show that severing the cervical spinal cord is followed by symptoms of dissociation of auricle and ventricle functioning, fibrillation and slowing of the heart rhythm. The balance between the accelerator and moderator nerves is upset and the latter assume predominating influence.

29. **Peripheral or Periarterial Sympathectomy.**—Leriche and Heitz apply this term to Jaboulay's method of denuding a segment of the large arteries by tearing away from them the network of sympathetic fibers which enlace them in a continuous sheath. He found this a successful means of influencing mal perforans of the foot (denudation of the femoral artery), and influencing certain neuralgias in the viscera (denudation of the celiac artery). Leriche announced in 1913 that a better effect was obtained by severing the sympathetic fibers, resecting the perivascular sheath over a certain stretch of the artery. Last year they found this measure successful in curing at once and permanently causalgia in the median nerve following a war wound in two cases. For this he resected the sheath of the brachial artery. Encouraged by this success they have been applying this same measure in treatment of paretic and spastic disturbances in the limbs of the reflex type, that is characterized by vasomotor and thermic disturbances, but without the reaction of degeneration. The details of nine cases are tabulated. In one there was intense pain in the median nerve, in the others there was paralysis or contracture of the arm or leg. The technic was the same in each case; the sheath clinging tightly to the artery was separated from it over a stretch of 6 or 9 cm. It is difficult to resect this sheath without tearing it into fragments, and the same points have to be gone over several times to be sure that the lower layers of the nerve network have been removed. The artery contracts to a small cord, but by the next day a vasodilating reaction follows. The temperature of the limb below may run up by 2 degrees C., but the central temperature does not alter. The blood pressure also rises. By the end of two weeks these symptoms have subsided, as a rule, and the artery has resumed its normal aspect. This was ascertained at a later operation on the limb in two cases. Clinical and experimental data harmonize as to the effect produced. They explain it as the result of the subsidence of the resistance hitherto maintained to the passage of the blood stream. The heart impulse is propagated to the periphery entire, until, after days or weeks, vascular tone is regained. See Abstr. 46.

Journal de Médecine de Bordeaux

March, LXXXVIII, No. 3, pp. 41-60

30 The Principles of Prophylaxis of Tuberculosis. X. Arnozan.—p. 43.

31 *The Antituberculosis Institutions in the Gironde Province before the War and at Present. (Les institutions antituberculeuses avant la guerre.) X. Arnozan.—p. 44; (Les œuvres militaires et les projets civils depuis la guerre.) X. Arnozan.—p. 53.

32 *The Tuberculous in the Hospitals. Leuret.—p. 55.

31, 32. **What Is Being Done in Southwestern France to Combat Tuberculosis.**—This entire number is devoted to descriptions of the various sanatoriums and organizations in the Gironde department, aiming to arrest the spread of tuberculosis. Arnozan remarks that among the thousand other problems brought by the war and pressing for solution, the question of what to do with the tuberculous soldiers soon became one of the most important. All provisions made for isolating and caring for them soon proved inadequate for the throngs flocking to them for a three months' course of treatment and training. Tuberculous soldiers are so numerous, at present, he says, especially in the cities, that their participation in social life is indispensable. To isolate them all suddenly would be to dry up an important source of the economic life of the country. Leuret reiterates that outside of the acute phases of this disease, the earning capacity of the tuberculous merchant, workman or farmhand may not suffer materially for years and years. But if the tuberculous soldiers return to indoor and factory occupations, their doom is sealed, while outdoor occupations might result in a clinical cure. Many tuberculous soldiers long to take up farm life, but they have no means nor training for this. Leuret proposes that the state should make it possible for them to return to the land. It would be cheaper in the long run, he insists, than merely palliative measures, such as sanatoriums and hospitals. A central office should be organized to study all the outdoor occupations open to the valid tuberculous, and also an employment bureau to place the men as farmhands, woodsmen, charcoal burners, surveyors, etc. But, better than all, is the plan to set up each tuberculous soldier on a small farm. A colony of such farms at a very low rental would solve the problems of restoring health, self-support and companionship. The house should be planned on the sanatorium model, with separate sleeping room for the tuberculous member of the family. Charitable societies have an ample field here. By this means the country would get the benefit of the strength still left in its tuberculous soldiers and their lives would be lengthened. Left to themselves, they will be apt to drift into crowded factories and sleep in close crowded rooms, sealing their own doom and infecting others.

Presse Médicale, Paris

February 8, XXV, No. 9, pp. 81-88

33 *Amebic Dysentery in France. (L'amibiase chronique en France à la fin de l'année 1916). P. Ravaut.—p. 81.

34 *Thumb Sign of Ulnar and Median Paralysis. (La préhension du pouce dans les paralysies du cubital et du médian.) P. Descoust.—p. 83.

35 The Throbbing in a Felon. (La sensation du doigt qui bat dans le panaris.) A. Gambier.—p. 84.

February 15, No. 10, pp. 89-96

36 *Biliary Fistulas. How to Avoid and How to Treat Them. V. Pauchet.—p. 89.

37 *Intraspinal Injection of Insoluble Calcium and Mercury Salts. A. Carniol (Bucharest).—p. 91.

33. **Chronic Amebic Disease in France.**—Ravaut remarks that the ameba is being found in the stools of an astonishingly large number of men who have chronic bowel trouble. In many cases there does not seem to have been an acute phase of dysentery; the insidious chronic type gradually became installed. The case charts of the men record merely gastro-enteritis with anemia, diarrhea with general weakness or the like. No one seems to have suspected dysentery in the first onset of trouble. The ameba parasites were evidently imported by troops from Africa early in the war, and months elapsed before there was an actual epidemic from them. In the majority of cases the disease starts in the rectum and

colon as usual, but the general symptoms and the frequency of metastasis in the livèr render it more a general disease than dysentery. Among the types encountered are those with rheumatic pains and sciatica. In all, the weakness and anemia and recurring bowel disturbance keep up indefinitely, with occasional intermissions, unless the ameba is attacked with emetin and the general condition strengthened with arsenic. He urges that the men with chronic bowel trouble should be segregated in some special hospital. At present they are scattered through the hospitals or have been sent home. The amebiasis being unrecognized and hence untreated, keeps the man a chronic invalid.

34. **Thumb Sign in Ulnar and Median Paralysis.**—Descoust gives three illustrations of the abnormal position of the thumb in holding with both thumbs a sheet of paper when there is paralysis of the ulnar or median nerve or both.

36. **How to Obviate and How to Treat Biliary Fistula.**—Pauchet gives eight illustrations showing the technic advocated by Bevan, Judd and Mayo, and his own method by which accidental injury of the bile passages is avoided. He also discusses how to treat a fistula if one develops.

37. **Intraspinal Injection of Insoluble Substances.**—Carniol remarks that while the intraspinal technic has given good results in the line of anesthesia, as a therapeutic method it has proved disappointing. He thinks this is due to the drug being absorbed too rapidly low down in the intraspinal canal, and he has been experimenting with dogs to learn the fate of comparatively insoluble substances injected into the spinal canal. Dogs bore without apparent disturbance intraspinal injection of massive doses of different comparatively insoluble substances, so that he was encouraged to try the method in the clinic. He treated some epileptics with intraspinal injection of from 30 to 70 cg. of calcium carbonate suspended in 1 c.c. of distilled water or olive oil. There was headache afterward, sometimes intense, and slight backache at the point of injection, but there was no disturbance of the motor functioning, reflexes or sphincters. The patients had been having from two to five seizures a day, but after the injection they had no more for five or eight days and then they recurred less frequently than before. The subsidence of the seizures shows that the drug finally reaches the brain. No benefit from the injections was apparent in four women with chronic mania. He also tried mercury salicylate in some syphilitics by this technic. After injection of from 3 to 7 mg. the reaction was negligible, but the cases are too recent to estimate the therapeutic outcome.

Progrês Médical, Paris

February 17, XXXII, No. 7, pp. 53-60

38 *Remote Results of Skull Wounds. (Le pouls, la tension artérielle et le réflexe oculo-cardiaque dans les suites éloignées des traumatismes craniens.) R. Oppenheim.—p. 53.
39 Nodular Erythema with Inherited Syphilis. A. Vahram.—p. 55.
40 Sadism. (Les allemands et le marquis de Sade.) P. Voivenel.—p. 58.

38. **Remote Results of Wounds of the Skull.**—Oppenheim tabulates the findings as to the pulse, blood pressure and the oculocardiac reflex in forty-seven men who some months or a year or more before had suffered from concussion of the brain; also in eighty-seven whose skull wounds had required trephining. No regularity or constancy in the modifications in these lines could be detected, and series of symptoms indicating vagotony or sympathicotony were rare. At the same time, discovery of an abolished or reversed oculocardiac reflex and of acceleration or retardation of the pulse may afford a valuable basis for estimation of the subjective disturbances of which the wounded may complain.

Revue Médicale de la Suisse Romande, Geneva

January-February, XXXVII, No. 1-2, pp. 5-92

41 Treatment of Diffuse Peritonitis by the Fowler-Murphy Method. C. M. Du Pan and R. Martin.—p. 5.
42 *Tubercle Bacilli in the Urine. (De la bacillurie chez les tuberculeux.) G. Humbert.—p. 35.
43 *Comparative Gravity of Location of Tuberculous Processes in Left or Right Lung. Tecon and Aimard.—p. 45.
44 Physiotherapy at Paris for the Wounded. F. M. Messerli.—p. 49.
45 *Functional Symptoms in Certain Cases of Femoral Hernia and their Relation to Pulmonary Tuberculosis. J. A. Veyrassat.—p. 56.
46 *Periarterial Sympathectomy in Treatment of Mal Perforans. (Du traitement du mal perforant plantaire par la dénudation de l'artère fémorale dans le triangle de Scarpa.) J. A. Veyrassat and A. Schlesinger.—p. 63.
47 Chronic Frontal Sinusitis. A. Pugnat.—p. 68.
48 Fetal Hiccup. (De singultu foetale.) R. Chapuis.—p. 70.

42. **Tubercle Bacilli in the Urine Without Lesions in the Urogenital Apparatus.**—Humbert examined the twenty-four hours' urine, to be sure to avoid erroneous conclusions from too small amounts. He allowed the sediment to settle for twelve hours, using a conical vessel, then decanted and centrifugated the 100 or 150 c.c. at the bottom of the vessel, repeating until he had the whole concentrated into a single tube. The sediment then was separated into two parts. One part was spread on four microscopic slides; the other part was used to inoculate guinea-pigs in case of positive microscopic findings. He thus examined the urine of thirty-eight patients with meningeal or pulmonary tuberculosis and no clinical signs of renal localization, and in a later series forty-seven with pulmonary tuberculosis. In the total forty-three cases of pulmonary tuberculosis, bacilluria was found in only seven, that is, in 16 per cent. Examination with the microscope is not conclusive; only inoculation of animals gives absolutely reliable findings. Hence examination of the urine is of little aid in the diagnosis, as the course of the case confirms the differentiation before the response from inoculation can be obtained. At the same time, the research reported confirms that tubercle bacilli may be found in the urine when the kidneys seem to be entirely intact, even at necropsy. Such cases are rare, but they corroborate the dictum that bacteriologic examination of the urine alone does not permit the diagnosis of renal tuberculosis.

43. **Comparative Gravity of Lesions in Right or Left Lung.**—This communication from Leysin is based on examination of 2,000 cases. The writers had their attention attracted to this subject by noticing that in their cases of artificial pneumothorax, the left lung was the one involved in 61 per cent. of one series of 66 cases and in 77 per cent. of another series of 31 cases. Study of 2,000 cases of tuberculosis under observation for from five months to several years, confirmed the peculiar gravity of left-sided lesions. There are various anatomic reasons for this, the smaller size of the left lung, the obtuse angle formed by the left bronchus and its smaller size, and the fact that the left lung has only two instead of three lobes. The fissures aid in checking the spread of a tuberculous focus. Roentgenoscopy often shows how the interlobar cleft seems to fence in the process. In the 2,000 cases, all but 658 were men. In the 516 cases of the first degree, 142 were in the left lung and 374 in the right. Only 7.5 per cent. of those in the left lung healed, while the total healed cases in the whole group was 83 per cent. Among the 1,052 of the second period, the left lung was affected in 472, and in this group 7 per cent. have died; 14 per cent. have grown worse; in 16 per cent. the process is in a stationary phase; 53 per cent. have improved and 11 per cent. are clinically cured. In the 580 with the process in the right lung, only 3 per cent. have died; 6 per cent. have grown worse, while 63 per cent. have improved and 16 per cent. are clinically cured. There was a cavity in the lung in 323 cases, including 205 in the left lung and 118 in the right. In this group, the left side cavities proved fatal in 38 per cent.; 31 per cent. of the patients have grown worse and 20 per cent. are in a stationary condition. In the right cavity group, 27 per cent. of the 118 cases have terminated fatally; 19 per cent. have become aggravated; 15 per cent. are stationary, 32 per cent. improved and 6 per cent. are clinically cured.

45. **Femoral Hernia and Pulmonary Tuberculosis.**—Veyrassat points out that while inguinal hernia may persist for years without serious functional disturbance, femoral hernia is liable to squeeze and drag on the intestine, setting up chronic irritation and local inflammation which may seriously impair the digestive functions. This in turn may impair the general health, so that the portals are opened to disease of various kinds. His attention was called to the subject by the comparative frequency of femoral hernia in the tuberculous. He assumed at first that it was merely a casual coincidence, but finally came to the conclusion that the femoral hernia

depressed the resisting powers by its disturbance of bowel functioning, and hence paved the way for the tuberculosis. All his patients with femoral hernia had had symptoms on the part of the bowel at times, attacks of pain, nausea and vomiting indicating some transient strangulation of the intestine. Such attacks of cramps and colic, with pains in the kidney region or suggesting lumbago, returned two or three times a year or oftener or at longer intervals, and sometimes resulted in actual strangulation. In almost all his operative cases of femoral hernia there was a history of such attacks or one just before the strangulation. All these disturbances disappeared permanently after the herniotomy. Even when there are no actual attacks, the small femoral hernia may keep up a condition of defective gastro-intestinal functioning by reflex influence, like chronic appendicitis. In some cases reported in detail the cure of the femoral hernia was followed by such improvement in the general health that the patients were able to throw off an apical process. The patients were able to conquer their tuberculous process as soon as digestion became normal. On the other hand, the coughing from a tuberculous process may aggravate a hernia and set up digestive disturbances, maintaining a vicious circle. In short, he declares, there is every reason to make it a principle to correct femoral hernia whenever encountered, both in prevention and in treatment of digestive and other affections. He always operates by the Berger technic and has never had a recurrence in any instance.

46. **Treatment of Mal Perforans by Resecting the Nerve Fiber Sheath of the Femoral Artery.**—Veyrassat and Schlesinger do not attempt to explain the reason why denuding the femoral artery, according to Jaboulay, has such a favorable influence on trophoneurotic lesions below. But their experience has confirmed its efficacy not only for mal perforans but for causalgia, for Raynaud's disease and other painful affections of arterial origin. In a personal case described at length, a man of 82 with tabes in an incomplete form, with triple mal perforans of the right foot rebellious to all treatment, was treated under local anesthesia by denuding the femoral artery in the triangle of Scarpa over an extent of 6 or 7 cm. It was exposed as if to be ligated, and then the tissues were sutured in tiers. The mal perforans at once began to slough off dead tissues and by the end of a week two of the ulcers had healed; the third and last had started to heal by the eighteenth day, and the delighted patient left the hospital the twenty-fifth day. The benefit may be from the stimulus imparted by the intervention to the vasomotor fibers. The operation may induce enough vasodilatation to overcome the constricting spasm from the altered sympathetic fibers. The benefit in Jaboulay's cases was durable. The trophoneurotic lesions became rapidly modified and, so far as experience has gone to date, they did not recur. The operation is absolutely harmless, they remark in conclusion, urging its application in rebellious cases of mal perforans. This operative method of treatment is called peri-arterial sympathectomy. See Abstract 29 above.

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 17, XLVII, No. 7, pp. 193-224

49 *Foreign Bodies in the Air Passages and Esophagus. E. Schlittler.—p. 193. To be continued.
50 Rapid Control of Drinking Water for Troops on a Campaign. F. Messerli.—p. 203.
51 Case of Pigmented Urticaria. Tièche.—p. 211.

February 24, No. 8, pp. 225-256

52 *Treatment of Placenta Praevia. C. M. Wirz.—p. 225.
53 *Foreign Bodies in Air Passages and Esophagus. (Fremdkörper der Luft- und Speisewege.) E. Schlittler.—p. 232. Commenced in No. 7, p. 193.
54 *Quartz Mercury Vapor Lamp in Treatment of Goiter. (Behandlung des Kropfes mit der Quarzlampe.) A. Haslebacher.—p. 243.
55 Blistering from Application of Crushed Buttercup Leaves to Cure Warts. (Dermatitis bullosa durch Hahnenfuss-Gift.) W. A. Münch.—p. 244.
56 Exvperiences in America with Autolysin Treatment of Cancer. (Zur Autolysattherapie des Krebses.) F. Dumont.—p. 245.

March 3, No. 9, pp. 257-288

57 *Traumatic and Military Neuroses. (Ueber Unfall- und Militärneurosen.) C. Strasser.—p. 257.
58 Factors in Coagulation of the Blood. (Zur Methodik gerinnungsphysiologischer Studien.) A. Fonio.—p. 274.

49. See abstract 53.

52. **Treatment of Placenta Praevia.**—Wirz cites statistics to show that more than twice as many women die from placenta praevia in the home as in institutions. He declares further that the majority of deaths from placenta praevia occur from laceration of the cervix and septic infection, and thus are direct consequences of our therapeutic measures. Our efforts therefore should be directed to prevent tears and infection. The danger of embolism is practically beyond our control. Reinhard reported from Dresden a mortality of 42 per cent. among 117 women who had been treated by tamponing the vagina. Wirz declares that no midwife is capable of tamponing the vagina aseptically, but the Prussian "Midwives Manual" enjoins them to do it. Even physicians had better not attempt it, Wirz adds, as its usefulness does not offset the dangers it offers. In France, Pinard and others condemn it, as also many obstetricians in various lands. Wirz is convinced that rest and morphin will arrest the hemorrhage so that the woman can be taken to the hospital. When there is hemorrhage toward the end of a pregnancy, placenta praevia is probably responsible for it, and he warns earnestly against internal examination. By refraining from tamponing the vagina and from internal examination, he is confident that many otherwise doomed lives will be saved. When there are good labor pains, the fetus in good position and the placenta praevia lateral, he advises puncturing the bag of waters, eventually combined with pituitary solution. The bag should never be punctured until the uterus is contracting well. In the home, combined version is to be preferred to the inflatable bag, but in the clinic the latter is justified in certain cases, as it gives a favorable prognosis for the child. Institutions show 30 per cent. more children saved with the inflatable bag. He adds that in institutions abdominal cesarean section should be applied more frequently. It materially improves the outlook for the child, while the chances for the mother are no worse than with other methods of delivery.

53. **Foreign Bodies in the Air Passages.**—Schlittler extols the advantages of endoscopy, saying that in his fourteen cases of a foreign body in the lower air passages, eleven were extracted by the direct method, and it failed only in one case. In the two others such a long interval had passed that success was practically out of the question. Fifteen of the thirty-four foreign-body cases described in detail were in children. In the five fatal cases there were febrile complications on the part of the lungs when first seen, and two others were moribund.

54. **Treatment of Goiter with Mercury Vapor Quartz Lamp.**—Haslebacher has been quite successful with vibration massage in treatment of goiter, and last year applied the quartz lamp in twenty cases. The first patient thus treated was a young woman who for some time had had symptoms of stenosis at night from her goiter. The first exposure induced considerable erythema, but there was no further tendency to stenosis, and in two weeks, with a total of four exposures, the goiter had entirely disappeared and there has been no recurrence during the ten months to date. Before this the patient had been given manual massage treatment and iodin externally and internally, but without effect. In the series of twenty cases, the symptoms of stenosis subsided first, and the goiter grew softer after two or three exposures. In three cases the patients were pleased with the results from four exposures. Another required ten, and the large cysts proved entirely rebellious. All seemed to feel better during the treatment, and no untoward by-effects were noticed in any cases.

57. **Nontraumatic Military Neuroses.**—Strasser relates that the Swiss troops have now been on guard duty at the boundary for over two and a half years. Many of the men worry over neglected home affairs, while not appreciating the necessity for this border duty. The consequence is that neuroses are comparatively frequent, ranging from neurasthenia, insomnia, hysteric attacks and chorea to gastric and cardiac nervous troubles. They are always the aggravation of some preceding disturbance. Under ordinary conditions, he says, the

military service of the male youth of Switzerland is regarded as a recreation, an honor, and fine sport. The system of military training makes comparatively small demands, and then only for a short time. There is scarcely ever a question of social and economic hardship for the individual in his brief return for service every year. On the contrary, it is looked on as a pleasant vacation from the everyday routine, and has rescued many men from impending neurasthenia and neuroses. But the monotony of these years of border duty and the pressure of home worries have in many instances fanned a predisposition into a flame. Strasser adds that the greater the physician's experience the less often he diagnoses simulation. In estimation and treatment of these neuroses, the physician must be guided by the principles of treatment for traumatic and nontraumatic neuroses of any kind, seeking a compromise between the extraordinary demands made now by the state and the needs of the individual.

Gazzetta degli Ospedali e delle Cliniche, Milan

February, 11, XXXVIII, No. 12, pp. 177-192

59 Pulmonary Tuberculosis with Rapidly Fatal Course Consecutive to a Fall Injuring the Chest. L. Manfredi.—p. 177.

February 15, No. 13, pp. 193-208

60 Rapid Development of Gas Gangrene. A. Franchini.—p. 193.

Policlinico, Rome

February 25, XXIV, No. 9, pp. 265-304

61 *Epidemic Jaundice. (Appunti epidemiologici sulla spirochetosi itterogena.) C. Moreschi.—p. 265; (Sull' ittero epidemico castrense.) F. Micheli and G. Satta.—p. 268; (Le recenti conoscenze sull'ittero infettivo.) G. Trincas.—p. 271; (Itteri infettivi e spirochetosi.) T. Pontano.—p. 277; (Ittero epidemico.) M. Merighi.—p. 280. Discussion.

January, Surgical Section No. 1, pp. 1-48

62 *Primary Epithelioma of Humerus. (Contributo clinico all'amputazione interscapulo-toracica ed istopatologico ai tumori epiteliali primitivi delle ossa.) N. Giannettasio.—p. 1. Conclusion.

63 *Transvesical Prostatectomy. P. Tasca.—p. 17.

64 Conclusions from Experimental Research as to Treatment of Perforation of Stomach and Intestine with War Wounds. A. L. Soresi (New York).—p. 29.

65 Excision of Tumor in Orbit without Appreciable Cicatrix and without Removing Eyeball. (Sopra un caso di resezione dell'ottico, per endothelioma, mediante il mio processo modificato.) S. Calderaro.—p. 40. To be continued.

61. **Infectious Jaundice.**—This entire number of the *Policlinico* is devoted to reports and discussions of infectious jaundice which has been quite prevalent not only among the troops, but in certain civilian populations. Moreschi reports experiences with it among the troops on the Isonzo front and at Voghera, the three hospitals having had 361 cases between June and December, forming about 17.5 per cent. of the total 1,299 patients in the hospitals during that period. The disease was extremely mild, all the men recovering except two. Only 48 per cent. of the cases had a febrile course; it averaged six days, the maximum twenty-two. The spirochete was found in the kidney tissues of animals inoculated from the clinical cases and the urine, both from animals and man, was found to contain them. Guinea-pigs were inoculated most reliably with urine. The kidney findings in the inoculated animals were so severe that the experimental disease seems, he says, to be an acute hepatonephritis. As the clinical cases developed usually without direct contact, he thinks it probable that some intermediate host is involved. The Japanese authors found the spirochete in rats, and Courmont and Durand have recently reported that they found the spirochete in 8 per cent. of fifty sewer rats examined at Lyons. They state that there was no disease among the rats at the time, and the Lyons district had not been invaded by the epidemic jaundice. Hence they are inclined to regard the rat as a reserve focus for the infecting agent. Some English writers have reported finding the spirochetes in six of fifteen trench rats. Moreschi states that the only measures found effectual in stamping out epidemic jaundice were the isolation of the sick, careful disinfection of the excreta, and impressing the necessity for extreme care of the person.

Micheli and Satta have encountered several hundred cases of epidemic jaundice in the military hospitals of the Turin district. All were of the Chauffard pseudocatarrhal form of infectious icterus or the Patella benign type. The blood findings were constantly negative, and animals inoculated with the blood never sickened. Probably, they suggest, the spirochetes had disappeared from the blood by the time the men reach the Turin district. In only one instance, inoculation of a guinea-pig with the urine from a patient gave positive result. Serum from convalescents, injected into guinea-pigs along with a suspension of liver tissue from other guinea-pigs that had died from the infection, protected the animal against the infection in 33 per cent. of the cases, and retarded the experimental disease in another 33 per cent. Deviation of complement tests, etc., resulted negatively. Merighi gives the clinical histories of his twenty-nine cases; all seemed to do better when they were given ordinary food in abundance. Leporini calls the disease "trench jaundice." He comments on the constant but benign involvement of the lymphatic system. Veratti relates that he made special tests for picric acid in some of the 125 cases of jaundice, he encountered, but always with negative findings. The men reached his district, Pavia, only in the later stages of the disease, and inoculation of animals with blood from the patients was always negative. But with fresh virus obtained from Moreschi at the front he reproduced constantly in guinea-pigs typical icterohemorrhagic spirochetosis which he transmitted further to rabbits and rats. One rat died, but the other animals, after a period of intense jaundice, all recovered.

Gozi stated that he has records of 1,627 cases of jaundice in the military hospitals, a few in June, 221 in July and August, 504 in September and the rest in October and November, with three deaths. He also knows of about 100 cases in the civilian populace, all in adults, rarely in the aged. The three pregnant women presenting the disease all died in less than three days. A fourth, a parturient, after lying in coma for four days, finally recovered. At necropsy of the three soldiers, he noted intense central hyperemia of the meninges and brain, in one instance with hemorrhagic fluid in the ventricles. The liver in one case resembled that of acute yellow atrophy. Carpi has found mercury and arsenic useful in treatment.

62. **Resection of the Shoulder.**—Giannettasio has operated at one sitting in two cases for extensive primary epithelioma of the head of the humerus requiring interscapular-thoracic amputation. In both the tumor straddled important veins and lymphatics, and there was no sign of the tumor's becoming encapsulated while it had invaded the surrounding muscles and glands. The danger of generalization of the malignant disease in these cases is imminent, and the fatal outcome in many cases is due to this having occurred before the operation was decided on. Mussey and Conant operated for a cancer on the hand, amputating first the thumb, then the forearm, then exarticulating the shoulder, and finally resecting the scapula and clavicle. Exarticulation of the shoulder alone is not enough to check the progress of malignant disease in the upper end of the humerus. This is conclusively demonstrated by the large proportion of the cases in which a secondary operation was done on the scapula. In both his cases the operative wound healed smoothly in a week, and in about two weeks the men left the hospital in clinically good condition. He gives microphotographs of one of the tumors, describing it as probably an adenoma of embryonal character of thyroid origin.

63. **Transvesical Prostatectomy.**—Tasca reviews his experiences in eight cases of hypertrophied prostate in which he operated by way of the bladder according to Freyer's technic. The men were all over 70 and the operation proved highly successful in all but one. This was a man of 80 with dysuria for ten years. The last two months the catheter had been constantly required for complete retention, fetid urine with pus in the sediment and occasional attacks of "urinary fever." An attack of this kind developed the day after the transvesical prostatectomy and the man died within twenty-four hours. There was tardy hemorrhage in three cases; it was easily controlled by reopening the wound and draining the bladder or by rinsing out the bladder with a hot fluid. In one case there was transient incontinence of urine after the bladder was sutured. The prostate was very large (150 gm.) in this case.

depressed the resisting powers by its disturbance of bowel functioning, and hence paved the way for the tuberculosis. All his patients with femoral hernia had had symptoms on the part of the bowel at times, attacks of pain, nausea and vomiting indicating some transient strangulation of the intestine. Such attacks of cramps and colic, with pains in the kidney region or suggesting lumbago, returned two or three times a year or oftener or at longer intervals, and sometimes resulted in actual strangulation. In almost all his operative cases of femoral hernia there was a history of such attacks or one just before the strangulation. All these disturbances disappeared permanently after the herniotomy. Even when there are no actual attacks, the small femoral hernia may keep up a condition of defective gastro-intestinal functioning by reflex influence, like chronic appendicitis. In some cases reported in detail the cure of the femoral hernia was followed by such improvement in the general health that the patients were able to throw off an apical process. The patients were able to conquer their tuberculous process as soon as digestion became normal. On the other hand, the coughing from a tuberculous process may aggravate a hernia and set up digestive disturbances, maintaining a vicious circle. In short, he declares, there is every reason to make it a principle to correct femoral hernia whenever encountered, both in prevention and in treatment of digestive and other affections. He always operates by the Berger technic and has never had a recurrence in any instance.

46. **Treatment of Mal Perforans by Resecting the Nerve Fiber Sheath of the Femoral Artery.**—Veyrassat and Schlesinger do not attempt to explain the reason why denuding the femoral artery, according to Jaboulay, has such a favorable influence on trophoneurotic lesions below. But their experience has confirmed its efficacy not only for mal perforans but for causalgia, for Raynaud's disease and other painful affections of arterial origin. In a personal case described at length, a man of 82 with tabes in an incomplete form, with triple mal perforans of the right foot rebellious to all treatment, was treated under local anesthesia by denuding the femoral artery in the triangle of Scarpa over an extent of 6 or 7 cm. It was exposed as if to be ligated, and then the tissues were sutured in tiers. The mal perforans at once began to slough off dead tissues and by the end of a week two of the ulcers had healed; the third and last had started to heal by the eighteenth day, and the delighted patient left the hospital the twenty-fifth day. The benefit may be from the stimulus imparted by the intervention to the vasomotor fibers. The operation may induce enough vasodilatation to overcome the constricting spasm from the altered sympathetic fibers. The benefit in Jaboulay's cases was durable. The trophoneurotic lesions became rapidly modified and, so far as experience has gone to date, they did not recur. The operation is absolutely harmless, they remark in conclusion, urging its application in rebellious cases of mal perforans. This operative method of treatment is called peri-arterial sympathectomy. See Abstract 29 above.

Correspondenz-Blatt für Schweizer Aerzte, Basel

February 17, XLVII, No. 7, pp. 193-224

49 *Foreign Bodies in the Air Passages and Esophagus. E. Schlittler.—p. 193. To be continued.
50 Rapid Control of Drinking Water for Troops on a Campaign. F. Messerli.—p. 203.
51 Case of Pigmented Urticaria. Tièche.—p. 211.

February 24, No. 8, pp. 225-256

52 *Treatment of Placenta Praevia. C. M. Wirz.—p. 225.
53 *Foreign Bodies in Air Passages and Esophagus. (Fremdkörper der Luft- und Speisewege.) E. Schlittler.—p. 232. Commenced in No. 7, p. 193.
54 *Quartz Mercury Vapor Lamp in Treatment of Goiter. (Behandlung des Kropfes mit der Quarzlampe.) A. Haslebacher.—p. 243.
55 Blistering from Application of Crushed Buttercup Leaves to Cure Warts. (Dermatitis bullosa durch Hahnenfuss-Gift.) W. A. Münch.—p. 244.
56 Exvperiences in America with Autolysin Treatment of Cancer. (Zur Autolysattherapie des Krebses.) F. Dumont.—p. 245.

March 3, No. 9, pp. 257-288

57 *Traumatic and Military Neuroses. (Ueber Unfall- und Militär-neurosen.) C. Strasser.—p. 257.
58 Factors in Coagulation of the Blood. (Zur Methodik gerinnungsphysiologischer Studien.) A. Fonio.—p. 274.

49. See abstract 53.

52. **Treatment of Placenta Praevia.**—Wirz cites statistics to show that more than twice as many women die from placenta praevia in the home as in institutions. He declares further that the majority of deaths from placenta praevia occur from laceration of the cervix and septic infection, and thus are direct consequences of our therapeutic measures. Our efforts therefore should be directed to prevent tears and infection. The danger of embolism is practically beyond our control. Reinhard reported from Dresden a mortality of 42 per cent. among 117 women who had been treated by tamponing the vagina. Wirz declares that no midwife is capable of tamponing the vagina aseptically, but the Prussian "Midwives Manual" enjoins them to do it. Even physicians had better not attempt it, Wirz adds, as its usefulness does not offset the dangers it offers. In France, Pinard and others condemn it, as also many obstetricians in various lands. Wirz is convinced that rest and morphin will arrest the hemorrhage so that the woman can be taken to the hospital. When there is hemorrhage toward the end of a pregnancy, placenta praevia is probably responsible for it, and he warns earnestly against internal examination. By refraining from tamponing the vagina and from internal examination, he is confident that many otherwise doomed lives will be saved. When there are good labor pains, the fetus in good position and the placenta praevia lateral, he advises puncturing the bag of waters, eventually combined with pituitary solution. The bag should never be punctured until the uterus is contracting well. In the home, combined version is to be preferred to the inflatable bag, but in the clinic the latter is justified in certain cases, as it gives a favorable prognosis for the child. Institutions show 30 per cent. more children saved with the inflatable bag. He adds that in institutions abdominal cesarean section should be applied more frequently. It materially improves the outlook for the child, while the chances for the mother are no worse than with other methods of delivery.

53. **Foreign Bodies in the Air Passages.**—Schlittler extols the advantages of endoscopy, saying that in his fourteen cases of a foreign body in the lower air passages, eleven were extracted by the direct method, and it failed only in one case. In the two others such a long interval had passed that success was practically out of the question. Fifteen of the thirty-four foreign-body cases described in detail were in children. In the five fatal cases there were febrile complications on the part of the lungs when first seen, and two others were moribund.

54. **Treatment of Goiter with Mercury Vapor Quartz Lamp.**—Haslebacher has been quite successful with vibration massage in treatment of goiter, and last year applied the quartz lamp in twenty cases. The first patient thus treated was a young woman who for some time had had symptoms of stenosis at night from her goiter. The first exposure induced considerable erythema, but there was no further tendency to stenosis, and in two weeks, with a total of four exposures, the goiter had entirely disappeared and there has been no recurrence during the ten months to date. Before this the patient had been given manual massage treatment and iodin externally and internally, but without effect. In the series of twenty cases, the symptoms of stenosis subsided first, and the goiter grew softer after two or three exposures. In three cases the patients were pleased with the results from four exposures. Another required ten, and the large cysts proved entirely rebellious. All seemed to feel better during the treatment, and no untoward by-effects were noticed in any cases.

57. **Nontraumatic Military Neuroses.**—Strasser relates that the Swiss troops have now been on guard duty at the boundary for over two and a half years. Many of the men worry over neglected home affairs, while not appreciating the necessity for this border duty. The consequence is that neuroses are comparatively frequent, ranging from neurasthenia, insomnia, hysteric attacks and chorea to gastric and cardiac nervous troubles. They are always the aggravation of some preceding disturbance. Under ordinary conditions, he says, the

military service of the male youth of Switzerland is regarded as a recreation, an honor, and fine sport. The system of military training makes comparatively small demands, and then only for a short time. There is scarcely ever a question of social and economic hardship for the individual in his brief return for service every year. On the contrary, it is looked on as a pleasant vacation from the everyday routine, and has rescued many men from impending neurasthenia and neuroses. But the monotony of these years of border duty and the pressure of home worries have in many instances fanned a predisposition into a flame. Strasser adds that the greater the physician's experience the less often he diagnoses simulation. In estimation and treatment of these neuroses, the physician must be guided by the principles of treatment for traumatic and nontraumatic neuroses of any kind, seeking a compromise between the extraordinary demands made now by the state and the needs of the individual.

Gazzetta degli Ospedali e delle Cliniche, Milan

February, 11, XXXVIII, No. 12, pp. 177-192

59 Pulmonary Tuberculosis with Rapidly Fatal Course Consecutive to a Fall Injuring the Chest. L. Manfredi.—p. 177.

February 15, No. 13, pp. 193-208

60 Rapid Development of Gas Gangrene. A. Franchini.—p. 193.

Policlinico, Rome

February 25, XXIV, No. 9, pp. 265-304

61 *Epidemic Jaundice. (Appunti epidemiologici sulla spirochetosi itterogena.) C. Moreschi.—p. 265; (Sull' ittero epidemico castrense.) F. Micheli and G. Satta.—p. 268; (Le recenti conoscenze sull'ittero infettivo.) G. Trincas.—p. 271; (Itteri infettivi e spirochetosi.) T. Pontano.—p. 277; (Ittero epidemico.) M. Merighi.—p. 280. Discussion.

January, Surgical Section No. 1, pp. 1-48

62 *Primary Epithelioma of Humerus. (Contributo clinico all'amputazione interscapulo-toracica ed istopatologico ai tumori epiteliali primitivi delle ossa.) N. Giannettasio.—p. 1. Conclusion.

63 *Transvesical Prostatectomy. P. Tasca.—p. 17.

64 Conclusions from Experimental Research as to Treatment of Perforation of Stomach and Intestine with War Wounds. A. L. Soresi (New York).—p. 29.

65 Excision of Tumor in Orbit without Appreciable Cicatrix and without Removing Eyeball. (Sopra un caso di resezione dell'ottico, per endothelioma, mediante il mio processo modificato.) S. Calderaro.—p. 40. To be continued.

61. *Infectious* **Jaundice.**—This entire number of the *Policlinico* is devoted to reports and discussions of infectious jaundice which has been quite prevalent not only among the troops, but in certain civilian populations. Moreschi reports experiences with it among the troops on the Isonzo front and at Voghera, the three hospitals having had 361 cases between June and December, forming about 17.5 per cent. of the total 1,299 patients in the hospitals during that period. The disease was extremely mild, all the men recovering except two. Only 48 per cent. of the cases had a febrile course; it averaged six days, the maximum twenty-two. The spirochete was found in the kidney tissues of animals inoculated from the clinical cases and the urine, both from animals and man, was found to contain them. Guinea-pigs were inoculated most reliably with urine. The kidney findings in the inoculated animals were so severe that the experimental disease seems, he says, to be an acute hepatonephritis. As the clinical cases developed usually without direct contact, he thinks it probable that some intermediate host is involved. The Japanese authors found the spirochete in rats, and Courmont and Durand have recently reported that they found the spirochete in 8 per cent. of fifty sewer rats examined at Lyons. They state that there was no disease among the rats at the time, and the Lyons district had not been invaded by the epidemic jaundice. Hence they are inclined to regard the rat as a reserve focus for the infecting agent. Some English writers have reported finding the spirochetes in six of fifteen trench rats. Moreschi states that the only measures found effectual in stamping out epidemic jaundice were the isolation of the sick, careful disinfection of the excreta, and impressing the necessity for extreme care of the person.

Micheli and Satta have encountered several hundred cases of epidemic jaundice in the military hospitals of the Turin district. All were of the Chauffard pseudocatarrhal form of infectious icterus or the Patella benign type. The blood findings were constantly negative, and animals inoculated with the blood never sickened. Probably, they suggest, the spirochetes had disappeared from the blood by the time the men reach the Turin district. In only one instance, inoculation of a guinea-pig with the urine from a patient gave positive result. Serum from convalescents, injected into guinea-pigs along with a suspension of liver tissue from other guinea-pigs that had died from the infection, protected the animal against the infection in 33 per cent. of the cases, and retarded the experimental disease in another 33 per cent. Deviation of complement tests, etc., resulted negatively. Merighi gives the clinical histories of his twenty-nine cases; all seemed to do better when they were given ordinary food in abundance. Leporini calls the disease "trench jaundice." He comments on the constant but benign involvement of the lymphatic system. Veratti relates that he made special tests for picric acid in some of the 125 cases of jaundice, he encountered, but always with negative findings. The men reached his district, Pavia, only in the later stages of the disease, and inoculation of animals with blood from the patients was always negative. But with fresh virus obtained from Moreschi at the front he reproduced constantly in guinea-pigs typical icterohemorrhagic spirochetosis which he transmitted further to rabbits and rats. One rat died, but the other animals, after a period of intense jaundice, all recovered.

Gozi stated that he has records of 1,627 cases of jaundice in the military hospitals, a few in June, 221 in July and August, 504 in September and the rest in October and November, with three deaths. He also knows of about 100 cases in the civilian populace, all in adults, rarely in the aged. The three pregnant women presenting the disease all died in less than three days. A fourth, a parturient, after lying in coma for four days, finally recovered. At necropsy of the three soldiers, he noted intense central hyperemia of the meninges and brain, in one instance with hemorrhagic fluid in the ventricles. The liver in one case resembled that of acute yellow atrophy. Carpi has found mercury and arsenic useful in treatment.

62. **Resection of the Shoulder.**—Giannettasio has operated at one sitting in two cases for extensive primary epithelioma of the head of the humerus requiring interscapular-thoracic amputation. In both the tumor straddled important veins and lymphatics, and there was no sign of the tumor's becoming encapsulated while it had invaded the surrounding muscles and glands. The danger of generalization of the malignant disease in these cases is imminent, and the fatal outcome in many cases is due to this having occurred before the operation was decided on. Mussey and Conant operated for a cancer on the hand, amputating first the thumb, then the forearm, then exarticulating the shoulder, and finally resecting the scapula and clavicle. Exarticulation of the shoulder alone is not enough to check the progress of malignant disease in the upper end of the humerus. This is conclusively demonstrated by the large proportion of the cases in which a secondary operation was done on the scapula. In both his cases the operative wound healed smoothly in a week, and in about two weeks the men left the hospital in clinically good condition. He gives microphotographs of one of the tumors, describing it as probably an adenoma of embryonal character of thyroid origin.

63. **Transvesical Prostatectomy.**—Tasca reviews his experiences in eight cases of hypertrophied prostate in which he operated by way of the bladder according to Freyer's technic. The men were all over 70 and the operation proved highly successful in all but one. This was a man of 80 with dysuria
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Riforma Medica, Naples

January 6, XXXIII, No. 1, pp. 1-28

66 *Medical Roentgenology. M. Bertolotti.—p. 1. To be continued.
67 *The Cardiovascular Disturbances with Kidney Disease. (Patogenesi della sindrome cardiovascolare nelle nefropatie.) T. Silvestri.—p. 9.
68 Anatomic and Functional Localization of Peripheral Nerves in Treating War Wounds. (Neuropatologia di guerra. III.) L. Ferrannini.—p. 14.
69 Treatment of Hemoptysis. (Cura dell'emottisi.) M. Landolfi. —p. 24.

January 13, No. 2, pp. 29-56

70 *Influence of Physostigmin on the Vegetative Nervous System. (Fisostigmina e sistema autonomo.) C. Quadrone and F. Dematteis.—p. 42.

January 20, No. 3, pp. 57-84

71 *Influenzal Pneumonia; Eight Cases. (Polmonite da influenza; otto guarigioni.) N. Federici.—p. 71.
72 Vocational Reeducation of the Wounded. L. Ferrannini.—p. 73.

66. **Medical Roentgenology.**—This series of lectures on the interpretation of the findings in Roentgen examination is continued through six numbers of the *Riforma*. It is accompanied by numerous illustrations. This first part is devoted to study of the normal and the pathologic spine.

67. **Causes of Cardiovascular Disturbance with Kidney Disease.**—Silvestri reviews the various theories advanced to explain the cardiovascular syndrome with kidney disease. None stands the test of facts except the Traube-Cohnheim theory that the heart becomes hypertrophied in its efforts to force the blood through the compressed or otherwise damaged blood vessels in the kidney. He thinks that this alone is enough to explain the cardiovascular syndrome. The normal products of nitrogen metabolism are enough for the purpose, independently of any abnormal endogenous products. The latter may modify and aggravate the phenomena from uremia. The kidney has to have a certain amount of blood flowing through it to accomplish its physiologic task. He says that in the course of chronic nephritis a period of inadequate function may alternate with periods of good functioning. The former grow more and more frequent until inadequate functioning becomes permanently installed.

70. **Physostigmin and the Vegetative Nervous System.**—Quadrone and Dematteis report several cases out of their more extensive experience showing the beneficial action of physostigmin salicylate on disturbances resulting from partial or general weakness of the autonomic nervous system. In the first case, after curetting the uterus after an abortion, paralysis of the bladder developed, persisting unmodified for four days, with complete retention. Within a few hours after a single injection of physostigmin salicylate the bladder resumed normal functioning. In the second case, after the woman's efforts to induce abortion the pelvic nerve stopped functioning properly; all the organs normally innervated by it felt the lack of its influence, while the heart and stomach also showed the influence of defective functioning of the vegetative nervous system. Under the injection of the physostigmin the dysuria disappeared first, then the gastrocolic distention and the rapid pulse grew normal. In four days clinically normal conditions had been restored. In these patients the disturbances were evidently the result of a traumatic shock; in some of the others typhoid, emotional stress, or failing compensation in heart disease had brought on sudden insufficiency of certain parts of the vegetative nervous system, involving the heart, lungs or digestive apparatus, or all at once. The physostigmin, they say, seems to stabilize and tone up the entire vegetative nervous system. It may act by the intermediation of hormones, as it seems to stimulate the secretions in the various endocrine glands. It stimulates the intracardiac terminals of the vagus, and one of the cases reported shows that it can sensitize the heart and render it susceptible to the action of digitalis, previously ineffectual. The symptoms from paresis of the sacral segment of the vegetative nervous system include paralysis of the bladder and colon, and meteorism suggesting ileus from paralysis. The ptoms from exhaustion or giving out of the bulbar seg- getative nervous system are acute enlargement ith retrosternal pain, asystole, rapid pulse, etc., gastrectasia, vomiting and inversion f the oculocardiac reflex. The mesencephalic segment may induce drooping of the lids, mydriasis and the paradoxic pupil reaction. The association of all these symptoms indicates complete miopragia of the entire segment involved. Physostigmin acts on the vegetative nervous system, and it seems to be tolerated in direct proportion to the indications for it.

57 *Traumatic and
neurosen.) C.
58 Factors in Coagulat
physiologischer Stu

71. **Influenzal Pneumonia.**—Federici relates that the symptoms deceptively simulated bronchopneumonia in his eight cases, except that there had been two days of frontal headache and rhinitis and sore throat before the lung symptoms developed. The infection ran a seven or ten-day course and the sputum was rusty, but there was nothing to suggest the crisis of pneumonia. All the patients recovered, but they were left more prostrated than is the rule with diplococcus infection. The course was somewhat shorter in children.

Prakticheskiy Vrach, Petrograd

1916, XV, No. 44-45, pp. 312-323

73 Diphtheria of the Ear and the Pathogenesis of Sudden Deafness in Scarlet Fever. (O difterii ukha i k patogenezu vnezapnoi glukhoti pri skarlatinie.) L. T. Levin.—p. 312. Commenced in No. 42, p. 300.
74 Investigation of the Motor Functioning of the Stomach. (K metodikie izsliedovaniya dvigatelnoi dieyatelnosti zheludka.) A. Z. Bilin.—p. 314. Commenced in No. 40, p. 288.

Russkiy Vrach, Petrograd

1916, XV, No. 50, pp. 1177-1200

75 Pirogoff on Gas Gangrene and Other Serious Complications of War Wounds. (Starie dokumenti po N. I. Pirogovu, etc.) N. M. Volkovich.—p. 1177.
76 Technic for the Wassermann Reaction. (K metodologii reaktsii svyazivaniya komplimenta na sifilis.) A. A. Bogomolets.—p. 1180.
77 Present Status of Radiotherapy of Uterine Cancer. (O liechenii raka matki luchistoi energiei.) N. M. Kakushkin.—p. 1185.
78 War Wounds of Vessels. N. A. Dobrovolskaya.—p. 1188. Continuation.
79 Automatically Spring Controlled Artificial Leg. (Iskusstvennaya noga dlya usiechennikh v bedrie s avtom. zatvorom i tormazom v koliennom sustavie.) V. N. Pilkoff.—p. 1193.
80 *The Innervation of the Completely Isolated Heart. (Ob innervatsii sovershenno izol. serdtsa.) N. G. Ponirovsky.—p. 1194.
81 Hot Sulphur Springs in Amura District. G. N. Maksimoff.—p. 1196.

80. **Innervation of the Isolated Heart.**—Ponirovsky describes his method of studying the vagus and the sympathetic nerves in connection with the heart, both the trunk nerves and the finer ramifications. He gives curves showing the behavior of the heart under various influences, and says that physiologists, pathologists and pharmacologists by this means can study the behavior of the isolated heart in warm-blooded animals. His research was done on frogs, rabbits and dogs, mainly on tracheotomized dogs. The vagus and sympathetic nerve branches passing to the heart were easily isolated, under artificial respiration, and the effects of stimulation of the one or the other could be instructively studied. He thinks this simple method will prove a valuable assistance in medical lectures on the heart nerves of warm-blooded animals.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

February 3, I, No. 5, pp. 273-352

82 *Accommodation in the Elderly. W. Koster.—p. 276.
83 *Treatment of Paralytic Dementia. A. Q. van B. Houckgeest.—p. 281.
84 *Polycythemia Rubra. J. Lankhout.—p. 294.

82. **Accommodation in the Elderly.**—Koster remarks that in certain elderly persons the power of normal accommodation persists until unusually late in life. When this occurs he has found it always associated with presbyopic asthenopia, which seems to conflict with the accepted theories as to the mechanism of accommodation. He warns, however, that certain conditions may simulate a normal accommodation power. For instance, senile myosis may be so intense that well-lighted print can be read at almost any ordinary distance. Incipient cataract may induce a similar effect, as he describes. He gives the details of four typical cases of extraordinary good accommodation in men and women in the sixties and one man of 51. The latter had normal accommodation power in only one eye. The asthenopia in all these cases was not continuous; there was no pain except with near vision. At an age when accommodation is generally reduced, these patients were able to adjust accommodation to 3, 4 or 5 D. Koster has

no explanation to offer for this, but says that it certainly cannot be explained by the mechanism of accommodation proposed by von Helmholtz.

83. **Paralytic Dementia.**—Houckgeest thinks that tuberculin treatment is promising in treatment of not too far advanced paralytic dementia. The leukocytosis which follows may induce a salutary modification of conditions, possibly enhancing the resisting power of the tissues to the spirochetes. He combines with it intramuscular injections of mercury salicylate and 1 gm. sodium iodid internally daily. He begins with 0.01 mg. tuberculin from mixed human and bovine strains and increases to a maximal dose of 0.5 gm. The mercury salicylate dose is 100 mg. every fourth day. The details of six cases are given, all quite far advanced. They justify, he declares, treatment along these lines in all forms of syphilis of the central nervous system, repeating the courses at need.

84. **Polycythemia.**—Lankhout has encountered three cases of polycythemia which he here describes in full. The first patient was a man of 59 who complained of pain resembling lumbago. He had had more or less pain for three or four years, especially in the stomach and abdomen, coming on directly after meals and radiating to the back. It was mitigated by reclining after meals. On sitting up or walking after meals, the pain became like colic in the abdomen and there was also pain back of the sternum. By waiting for an hour after meals he can then exercise without disturbance. He is of a plethoric habit, the face purplish red with a cyanotic tinge; the fingers are of the drumstick type, the pulse 68, with high tension, and the temporal arteries are tortuous. There is no edema, no albuminuria or glycosuria. One physician ascribed the disturbances to the stomach and advised an operation; a third diagnosed the case as a pancreas affection. Lankhout was struck by the resemblance to what Ortner has described as intermittent angiosclerotic dyspragia of the intestines. There is probably also a dyspragia of the heart as well, and the man recently had an attack of typical intermittent claudication in the left leg. Ortner found at necropsy of his patient changes in the abdominal vessels which readily explained the phenomena. The patient succumbed to peritonitis after an exploratory laparotomy. This had been proposed in Lankhout's case, but was fortunately omitted. The spleen was enlarged, suggesting analogy with Vaquez' disease. The features of this are the congestion in the face, the enlarged spleen and the exceptional number of red corpuscles. In Lankhout's case the reds numbered 8,100,000, the whites 7,200. The retinal arteries are of the normal caliber, but the veins are large and tortuous as with choked disk. This is a characteristic and early sign of polycythemia rubra. The heart and lungs seem normal; the liver seems large on account of the abundance of blood in it. The congestion in the various organs is liable to induce tinnitus, dizziness, headache and pains in the legs suggesting erythromelalgia. In his case the blood findings showed excessive functioning on the part of the bone marrow. The Wassermann test was negative, and the reds were normally resistant. The blood as a whole is increased in amount, and the viscosity is abnormally high, and yet, with all this, hypertrophy of the heart is not an element in the clinical picture. In Lankhout's case the blood pressure was 160 to 175 mm. This feature of the case resembled Geisböck's polycythemia hypertonica (1904) although in this the spleen and liver are not enlarged. Lankhout reports two typical cases of this latter form in men of 51 and 60. Neither of his three cases of polycythemia offer any suggestion as to the etiology. The true nature of the trouble was not recognized in two of the cases for a long time. Two of his three patients were of Jewish families. Hemorrhages, thrombosis and apoplexy menace the patients. Withdrawal of from 300 to 500 c.c. of blood every four or six weeks, restriction to a vegetarian diet, to keep down the viscosity of the blood, and the avoidance of everything liable to injure the vessels have given most palliative benefit. Vague complaints suggesting congestion of organs, especially near the brain, and in the liver and spleen should call for examination of the fundus of the eyes. Erythromelalgic pains should suggest Vaquez' disease, and the blood findings will confirm the diagnosis.

Hospitalstidende, Copenhagen

February 7, LX, No. 6, pp. 121-148

85 *The Internal Ear with Inherited Syphilis. (Om hereditaer Syphilis i Labyrinthen.) L. Mahler.—p. 121.

85. **Inherited Syphilis and the Internal Ear.**—Mahler expatiates on the remarkable precision which the more recent functional tests of the internal ear have brought to our study of the effects of inherited syphilis on this organ. He summarizes recent literature on the subject, analyzing Alexander's experience with forty-three cases personally observed (1915), as also the experiences of Beck, Ruttin, Urbantschitsch and others. He reports also a case from his own practice, a girl of 14. The destructive lesion in the internal ear had induced total deafness on one side and nearly complete on the other. As he knows of instances in which salvarsan had reduced the small hearing capacity left, he did not venture to give salvarsan but started treatment with a course of pilocarpin, as Politzer recommends, following this with mercurial inunctions. No effect from the treatment was apparent on the internal ear. The consensus of opinion seems to be now that treatment should begin with a course of mercurial inunctions, following with salvarsan; and then a further course of inunctions. Alexander urgently commends salvarsan, having had two patients remarkably benefited among eleven given this treatment. Beck has had some patients improve under it but his later series have shown no benefit. Leidler has reported a case (1911) in which what was left of the hearing was almost completely lost after salvarsan treatment, and Wanner (1911) has had similar discouraging experiences in four cases. In Mahler's case, except for parenchymatous keratitis, there were no symptoms from the inherited syphilis outside of the internal ear. The Wassermann was positive. Heat and cold and rotation tests did not elicit any reaction, but the stronger mechanical tests induced nystagmus and vertigo. The findings were those of the so-called "fistula symptom" although there was no fistula. The fistula or pressure fistula symptom we expect to find when there is erosion or a fistula in the labyrinth and a destructive process or displacement of the contents of the fenestra ovalis. It is supposed that with normal tympanic membrane and normal middle ear or with uncomplicated suppuration in the middle ear, compression and aspiration do not induce any reaction in the static labyrinth. But in this case, although the membrane and the middle ear are normal, yet mechanical irritation elicits nystagmus and vertigo.

Hygiea, Stockholm

LXXIX, No. 3, pp. 97-144

86 *Presence of Colostrum in Mammary Glands of the Nonpregnant. (Om kolostrumförekomsten i de kvinnliga bröstkörtlarna och dess betydelse såsom diagnostiskt hjälpmedel.) W. Gårdlund.—p. 114.

86. **Colostrum in the Mammary Glands of the Nonpregnant.**—Gårdlund had his attention called to this subject by finding colostrum in both breasts of a woman of 41 who had borne four children but was not pregnant at the time. She was in the hospital to have an edematous uterine myoma removed. Colostrum was also found in both breasts of a woman of 45 under treatment for gonorrheal salpingo-oophoritis. Examination ten months later, long after complete recovery from her pelvic trouble, and months after the menopause had been under way, showed still the presence of abundant milk in the mammary glands, resembling in every respect apparently colostrum milk. In a third case a young woman imagined hereself pregnant, and colostrum was found in the mammary glands, but the suspicion of pregnancy proved unfounded. In a fourth case an unmarried virgin of 28 consulted him on account of a permanent secretion from one breast which seemed to be colostrum. It could also be expressed from the other breast. She had had a tuberculous pulmonary affection at one time, but it had been clinically healed for some years.

Gårdlund after these experiences had the mammary glands of 393 women examined as they came to the Serafimer clinic for women's diseases. Excluding from his list five girls under 15 and fifty women who had been nursing children within a year, he found colostrum in 15 per cent. of eighty-two nonpregnant nulliparae; in 46 per cent. of 127 nonpregnant women who had borne from one to several children, and in 20 per cent. of sixty-three women in the menopause. In a further group of fifty-six pregnant women, 54 per cent. showed the presence of colostrum; the women were at the third to the ninth month of the pregnancy, and the ages ranged from 20 to 40, two thirds of the positive cases being in women of 20. In ten other women it was impossible to decide whether they were pregnant at the time or not, but colostrum was present in the mammary glands of seven. Out of the total 338 women, the findings as to colostrum were thus positive in 120, that is, in fully 36 per cent., and in 209 nonpregnant, namely, 33 per cent. The presence of colostrum therefore cannot be accepted as an auxiliary sign of pregnancy, and its coincidence with gynecologic disease is probably merely casual.

Ugeskrift for Læger, Copenhagen

January 18, LXXIX, No. 3, pp. 85-128

87 *Pyelitis in Pregnant and Parturient Women. (Om Pyelitis i Svangerskabet, under Fødselen og i Barselsengen.) S. A. Gammeltoft.—p. 85.

January 25, No. 4, pp. 129-184

88 *Technic for Determining Sugar in the Blood by Bang's Micromethod. (Undersøgelser over Bang's Mikrosukkertitrering.) R. Ege.—p. 129.

89 *Phototherapy of Pulmonary and Bone and Joint Tuberculosis. (Om foreløbige Resultater af Lysbehandling ved Lungetuberkulose og kirurgisk Tuberkulose.) V. Schmidt.—p. 138.

87. **Pyelitis in the Pregnant and Parturient.**—Gammeltoft remarks that the first manifestations of pyelitis may deceptively simulate other intra-abdominal affections, and the difficulty in differential diagnosis is still further enhanced by the widely varying course in different cases. In about 70 per cent. of the cases the colon bacillus is responsible for the pyelitis, which confirms the assumption that the intestines are the source of the infection in many cases. Constipation and slight gastro-intestinal disturbance are peculiarly common in the pregnant. The acute form may develop suddenly, with or without a chill, with fever and depression. Nausea and vomiting are common. The pains at first may suggest labor pains, or they may be diffuse for a time but after a few hours they become localized in the kidney region, usually the right but sometimes on both sides. The tongue is not dry as with abdominal trouble. There may be pains and tenderness along the ureter and bladder, also in the legs. The tenderness in the iliac fossa may be pronounced, but the symphysis generally is not or very little tender. Inquiry usually elicits that there have been lumbar pains for a time or unduly frequent urination, and the urine may have caused smarting. The urine looks turbid and usually gives an acid reaction. The putrid odor suggests colon bacillus infection, and there may be albumin. The microscope is generally sufficient, without bacteriologic examination. Sometimes the urine is entirely normal even with unmistakable signs of pyelitis, the ureter having become obstructed and only the urine from the sound kidney reaching the bladder. This is particularly liable to be the case in pyelitis in a parturient. The temperature may fluctuate abruptly from 104 F. to subnormal but the general condition usually keeps good and the pulse regular. After eight or ten days of treatment the acute phase passes into a latent or chronic stage. This latent phase may be the first manifestation and it may be overlooked, as the only symptoms may be pains in the lumbar region and rather frequent desires to urinate, all of which are apt to be ascribed to the pregnancy alone. In cases of this kind the urine should be examined both chemically and with the microscope; leukocytes and bacteria will be found in the urine although not in such numbers as in the acute form.

The ureter that has been stretched and compressed during the pregnancy may get kinked during the puerperium and set up sudden acute disturbances. These are liable to be mistaken for puerperal fever. Acute pyelitis is liable to be mistaken also for beginning pneumonia, but the pulse and respiration are not so high as with the latter, and the pains with pyelitis spread downward, both with deep breathing and with movements. It may be difficult to distinguish between pyelitis and appendicitis. Pain on compression of the descending colon from the left iliac fossa speaks for appendicitis, also rigidity of the muscle wall. The symptoms of appendicitis during pregnancy are not so clear and pronounced as under other conditions, especially the peritoneal symptoms. Differentiation often depends on the urine alone, and pyelitis may occur as a complication of acute or chronic appendicitis. Cystoscopy and catheterization of the ureters require the hospital environment, but they are conclusive and, properly done, harmless, even near term. In treatment, bed rest, moist heat to the region, and copious drinking of milk, lemonade, boiled water and weak tea, may be supplemented with salol plus sulphuric acid mixture, or hexamethylenamin can be used. He remarks that the latter is liable to induce slow and painful discharge of urine or hematuria and increase albuminuria and tube casts. The urine must be kept acid in order to get the benefit from hexamethylenamin, and Gammeltoft gives with it in a little water a tablespoonful of a mixture of 10 gm. dilute hydrochloric acid; 90 gm. syrup of raspberry and 200 gm. distilled water. He gives the hexamethylenamin or its equivalent in 50 cg. doses every four hours. Catheterization of the ureter may be necessary in case of retention, but he warns against the temptation to rinse out the kidney pelvis when the catheter is in place. This is liable to spread the infection to the kidney proper. The catheter must not be left in the ureter as this is liable to bring on hemorrhage. Turning the woman on her other side may release the ureter from pressure and put an end to the retention without further measures. Another simple measure which may prove useful is to rinse out the bladder; *the reflex reaction may overcome any spasmodic contraction of the kidney pelvis. When the* acute attack has subsided, but leukocytes and bacteria still are found in the urine, he lets the patient get up after she has had no fever for eight days, but salol had better be kept up, 50 cg. four times a day. The urine should be examined every week and there should be considerable intake of fluids. To ward off recurrences an autogenous vaccine may prove useful. When a parturient develops high fever, the urine should be examined without delay, and no active measures should be attempted. Infected urine soiling the vagina does not seem capable of starting puerperal infection.

Changes of position are particularly likely to aid in treatment of pyelitis during childbirth. He keeps the patient in bed till the urine is free from leukocytes at least. Bacteriuria may long persist. It should be perseveringly attacked with salol and vaccine. He warns that the bacteria may change during the course of the pyelitis, and the autogenous vaccine has to be made from the actual strain at the time. If the pyelitis drags interminably, concretions must be sought or prolapse or displacement of the uterus, or adnexa trouble. The urethra should also be examined; the bladder mucosa may protrude and lead to reinfection of the bladder urine. Achylia, colitis, chronic appendicitis or some chronic gynecologic affection may be responsible for keeping up the pyelitis.

88. **Determination of Sugar Content of the Blood.**—Ege has been applying simultaneous tests to the blood, Bang's micromethod, Riegler's and the fermentation tests. Bang's method has a wide range of error, he emphasizes, the outcome varying with the length of time the fluid is boiled and the amount of heat applied. But it can be relied on with confidence if the test is applied with uniform technic, giving a longer time for reduction and using a gas regulator.

89. **Phototherapy of Tuberculosis.**—Schmidt reports the results of treatment of tuberculous patients at the Finsen Light Institute at Copenhagen. He says that Finsen's arrangement of carbon arc lights gives rays nearest in chemical action to the sun's rays, and the results in thirty patients with pulmonary tuberculosis are recorded. The exposures were at first only thirty minutes but were gradually lengthened to a total of two and a half hours daily. The patients reclined, the lamps at a distance of about 30 inches. The total exposures averaged about 500 hours. The results were less pronounced than with surgical tuberculosis. No influence on the fever or night sweats was apparent, nor on the expectoration or bacilli in the sputum. The patients rather enjoyed the experience, and this in itself is a gain. *It is evident that much* longer courses are necessary for decisive effects, and that the indications for this treatment need further limitation.

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THE INTERPRETATION OF THE NEUROSES

BIOLOGIC, PATHOLOGIC AND CLINICAL CONSIDERATIONS, TOGETHER WITH AN EVALUATION OF THE PSYCHOGENIC FACTORS[*]

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PHILADELPHIA

Of recent years, views and theories have been expressed concerning the neuroses which, if allowed to stand, would hopelessly and permanently confuse and obscure the subject. The advent of psychanalysis has led the disciples of Freud to an abandonment of clinical methods. Gross facts of structural abnormalities and of actual physical illness are ignored as though these facts had no existence. The mental symptoms of the patient alone are considered, and these are uniformly ascribed to sexual traumas, to repressed complexes, in which the essential rôle is always played by the "libido." Even when freudian theories are not exclusively adhered to, it has become the vogue to assign to every neurosis a psychogenic origin; and writers have not been wanting in recent times who have maintained that a classification of the neuroses is neither possible nor necessary. Let us see how much of truth there is in this position.

It has long been known that fatigue is manifested by a group of symptoms well marked and definite. In order that their character and significance may be more readily appreciated, it may be well to consider briefly some of the facts of normal function. The exercise of function implies a nutritive change, a change which is marked in direct proportion to the degree of the activity. The fact of change is seen in the muscles, the nervous system, the digestive apparatus, the blood, the blood-making organs, the various glands, both of internal and external secretion, and in the other tissues as well.

The most striking and perhaps best known illustration is that offered by the muscles. During functional activity the latter undergo striking chemical changes. Thus, the chemical reaction, which is neutral or feebly alkaline in a muscle at rest, becomes acid, through the production of phosphoric acid, in a muscle that is active; there is also in the active state a greatly increased elimination of carbon dioxid, while the tissue consumes proportionately more oxygen; further, the active muscle contains more water, it yields an increased quantity of extractives soluble in alcohol, a lessened quantity of extractives soluble in water, and lessened quantities of substances producing carbon dioxid, of fatty acids and of creatin and creatinin, and of glycogen. Again, during functional activity the capillaries dilate, the muscle contains more blood, and the blood in its veins differs chemically from that found in its veins when at rest.

Similar facts obtain in regard to the other tissues, though our knowledge of the details is much more meager. Nerve substance, like muscle, when at rest is neutral or feebly alkaline, and when active is acid. The exchange of oxygen and carbon dioxid has not been actually demonstrated, but the facts attending vascular supply and temporary obstruction justify the inference that such changes of necessity take place, while the presence in the blood of the veins of substances the products of retrogressive metamorphosis can have but one meaning. As regards the changes observed in other structures, it may be stated as a general fact that all organs in which periods of rest alternate with periods of activity present striking differences corresponding with these periods.

The changes taking place in nerve cells, muscle and other structures during the exercise of function indicate a consumption of tissue — a consumption which depends directly on increased oxidation. Energy is eliminated as a result of this increased oxidation; further, of necessity, this elimination of energy means loss of substance. Functional inactivity, on the other hand, is accompanied by the restitution of substance. This is the storing up of energy in a latent form. Evidently in order to preserve the physiologic condition — the normal balance — there must be a due proportion between functional activity and rest.

To the foregoing facts must be added the rôle played by the products of tissue waste. It is well known to physiologists that if a frog muscle, which has been completely exhausted by electrical stimulation and refuses any longer to respond, is washed out by injecting into its artery ordinary salt solution, the muscle again reacts to the electrical current and almost as well as before. Evidently the waste products which accumulate in the muscle substance restrain or inhibit the muscular contraction. If it is true that the action of the muscles is thus inhibited, a similar truth doubtless obtains in regard to the action of waste products in other organs, notably in the nerve centers. It thus becomes evident that in fatigue we have to do with two factors: first, the consumption or reduction of substance the result of functional activity, and, second, the impeding of restraining influence of the materials resulting from this reduction.

Further, the substances resulting from the normal exercise of function play an important and beneficial rôle in the economy. They prevent, other things being equal, undue or excessive fatigue. Their probable physiologic action is to induce rest by retarding activity. Thrown into the circulation under normal conditions, they act as sedatives and are among the direct causes of rest and sleep. The excessive exercise of function leads primarily to the excessive consumption of tissue, and under these circumstances waste substances are present in abnormal amount. Instead of a gentle sedative or retarding influence, they now exert a toxic action. They accentuate the weakness and exhaustion and act as irritants and excitants, and, instead of inducing rest, disturb or prevent it. Moreover, excess of function, if persisted in, leads to a perversion of the chemical changes, and thus arises an additional element of toxicity. That metabolism is deranged in states of fatigue is definitely known.[1]

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[*] Annual address of the president, read before the Philadelphia Neurological Society, Jan. 26, 1917.

[*] Because of lack of space, this article has been shortened considerably for publication in THE JOURNAL. The complete article appears in the author's reprints, a copy of which will be sent by the author on request.

For us, as clinicians, the all important inference from the foregoing considerations is the fact that fatigue is a real, a physical condition, and that it is not of psychic origin. Least of all is it to be explained as an attitude or state of mind the result of infantile sexual traumas.

NEURASTHENIA

In the demands which modern civilization makes on the individual, undue expenditure of energy, an expenditure which results in overfatigue, is of frequent occurrence. Under these circumstances, a condition is established in which neither the normal amount of rest nor food suffices any longer to restore the organism to the equilibrium present in health. Gradually a well defined symptom group, a neurosis with a definite symptomatology, becomes established. Lay persons have long recognized this condition and speak of it as nervous prostration, and to it Van Deusen and later Beard applied the term "neurasthenia," while I myself have suggested, as the equivalent of the latter, the expression the "fatigue neurosis."

The first fact which impresses us is that the patient becomes readily exhausted. He is incapable of the sustained expenditure of energy. This is true whether the expenditure is physical or mental. In keeping with this fact is also that of irritability, of exaggerated response to stimuli from without; that is, along with the lessened capacity for expenditure of energy, there is also a lessened inhibition. The muscles, for instance, rapidly reveal the signs of fatigue; muscular effort very soon exhausts the patient. At the same time there is present a diminished inhibition of the tendon reflexes; quite commonly the latter are exaggerated. Again, the mental phenomena of neurasthenia are those of ready exhaustion. There is a marked diminution in the capacity for sustained mental work. There is difficulty in maintaining the attention; concentration requires a special effort. Apprehension takes place less readily, and there is a marked diminution in the spontaneity of thought. In other words, the patient becomes mentally tired after very little exertion. At the same time, there is a markedly increased irritability, that is, a diminution of inhibition. That the tired man is a cross man is well known. His self-control is diminished. He is easily excited and angered; his emotions generally are easily disturbed.[2]

The man who is chronically tired loses some of his personal force and will power. He becomes unable to decide matters of business with his usual readiness. Difficult and unpleasant matters are deferred. Things which require special effort are put off and remain undecided. Gradually this extends to matters relatively trivial and unimportant. Finally, lack of spontaneity and will power may become frankly associated with habitual uncertainty, hesitation and indecision.

Again, that a person whose nervous system is exhausted should also be morbidly afraid is not surprising; weakness and fear are naturally associated. Fear is a natural concomitant of diminished personal force, uncertainty and indecision. The fear may amount merely to a general feeling of uneasiness or anxiety, and may be more or less continuous; or it may come on in paroxysms, in sudden attacks generalized in character, which I have described as attacks of spontaneous generalized fear.

Neurasthenia presents itself as a well defined syndrome. While the picture is somewhat varied in different cases and often complicated by the appearance of secondary symptoms, its essential and underlying features are always those of chronic exhaustion, a persistent fatigue. There is always present a ready exhaustion, both physical and mental, together with the secondary outgrowths of this condition. The symptoms which I have here outlined are those of an exhaustion affecting an organism otherwise normal; that an entirely normal, non-neuropathic person may from overwork or other nervous overstrain develop nervous exhaustion need hardly be stated. It is this condition to which I have applied the term "neurasthenia simplex," and it is to this condition that the term neurasthenia simplex should be limited.

PSYCHASTHENIA

That the clinical picture must be more or less modified when the organism has been previously neuropathic would seem probable on *a priori* grounds, and this the facts prove to be actually the case. As just stated, a person who is not neuropathic may under given conditions develop nervous exhaustion; if he happens to be neuropathic, special symptoms are developed which by their prominence dominate the clinical picture; indeed, often to such an extent that the factor of the nervous exhaustion may be lost sight of.

The general symptoms resemble those encountered in simple neurasthenia. Lack of sustained effort and spontaneity are here also present, and may become much exaggerated. Together with this the patient has a sense of powerlessness, insufficiency, inadequacy. He is hesitating, irresolute, timid, fearful. He reveals his condition both in his actions and in his mental operations. Merely the idea of having something to accomplish may frighten him, so convinced is he of his powerlessness to achieve a result. He can do nothing like the rest of the world; sometimes he feels that he cannot make a single gesture freely and with ease. This feeling of inadequacy usually becomes exaggerated if the task is new or if the patient happens to be in the presence of strangers or in public. Sometimes this feeling is so pronounced as to lead to discouragement and hopelessness or even to a profound inertia. There is an impairment of the will, uncertainty and doubt, and, added to this, there is a diminished inhibition. The patient is easily upset, excited and disturbed, and he is also the victim of fear continuous or coming on in attacks.

Hesitation and lack of decision may become so pronounced that they develop into a folie de doute, a veritable insanity of indecision; weakness of will may lead to a pronounced abulia; and the fears may develop into special phobias, obsessions or anxieties. How some of the latter may arise can be readily understood. For instance, a patient has a spontaneous attack of generalized fear. If he is suffering merely from a simple neurasthenia, that is, if he has not previously been neuropathic, the attack of fear passes off without any after-effects; but if the patient is neuropathic, a pathologic association may be formed in his mind so that the emotion of fear becomes definitely linked to certain relations of the environment. Thus, a patient happens to have a spontaneous attack of fear while alone; immediately there is formed in his mind an association between the attack of fear and the fact of being alone, and a monophobia results. Time will not, of course, permit of further discussion of this interesting subject, but it is necessary to point out briefly the character of those defects of inhibition to which English writers have applied the term insanity with irresistible impulse, the French, obsessions with irresistible tendencies, and the Germans the expression *Zwangsneurose,* compulsion neurosis. Here are included the various tics, tic convulsif and the impulsive movements and actions generally.

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[1] A consideration of the rôle played by the internal secretions in fatigue would take us too far afield. Suffice it to say that it is alike important and interesting.

[2] For a systematic presentation of the subject, the reader is referred to the unabridged reprint of this paper; to the chapter on Neurasthenia in "Nervous Diseases by American Authors," edited by the author, Philadelphia, 1895; *to* "A Clinical Manual of Mental Diseases" by the author, Philadelphia, 1914, and to "Rest, Mental Therapeutics and Suggestion" by the author, Ed. *2*, to be published.

The brain, under normal conditions, is constantly eliminating impulses. These impulses are the result of the interaction of the mind — its previously acquired memories, associations and activities — with the environment. These impulses are normally controlled, restrained, inhibited; they may be diffused or they may be directed into special channels. As a rule they are useful to the organism; they may enable it to accomplish a definite object, or they permit the harmless and pleasurable release of energy. If the patient is neuropathic and at the same time neurasthenic, first, inhibition is diminished and, secondly, the discharge takes place in accordance with such pathologic associations as have been formed in the patient's mind. Time will not permit us to trace here the origin of the latter. Suffice it to say that they may be linked with fears and obsessions, with the memory of unpleasant experiences, ideas which excite abhorrence, disgust and dislike, or they may be entirely normal associations which reach the surface with pathologic ease; such, for instance, as the oaths and expletives which the tired man uses but which in neurasthenic-neuropathic states find their way to the surface both out of time and out of place.

The neurasthenic-neuropathic states, I have at various times described under the general caption of the neurasthenoid states, a term which includes the same group of cases to which Janet later applied the term "psychasthenia." Clearly the foregoing considerations enable us to separate out of the group of the neuroses, first the neurasthenic and secondly the neurasthenic-neuropathic states; namely, neurasthenia and — to employ the term of Janet — psychasthenia. Let us now turn our attention to a third, namely, hysteria.

HYSTERIA

Our knowledge of hysteria has been of slow and gradual evolution. The early Greeks believed that the explanation of the phenomena which they witnessed was to be sought in the behavior of the uterus. They believed that during a hysterical attack the uterus becomes detached from its moorings and goes wandering about the body seeking sexual satisfaction. We cannot pause to trace the history of this wandering uterus, which extends from the days of Plato and Hippocrates down to our own time. Suffice it to say that it was revived as late as 1816 by Louyer-Villermay. For us the chief interest in the uterine theory of hysteria lies in the fact that it has served to fasten the name "hysteria," derived from hystera (ὑστέρα), the Greek word for uterus, on the affection. It is interesting to note that while the crude theory of the wandering uterus has been abandoned, ideas as to the sexual origin of hysteria have persisted, in modified forms, to the present day. Unsatisfied passion, unrequited love, genital irritation and, lastly, repressed memories of sexual peccadillos in childhood — advocated by the freudian school — have in turn served to befog the subject, to surround it with a veil of mystery and to lend it a prurient interest.

It was Charcot who finally led the way in the direction of clinical study. Here he was closely followed by his pupils Paul Richer and Gilles de la Tourette. We are all familiar with the elaborate descriptions of the hysterical attack and the elaborate chartings of the interparoxysmal period which ensued, and, for a time, it seemed as though a definite symptomatology of hysteria had been established. Logically and inevitably, however, these studies led to the discovery of the final truth, a truth as revolutionary as it was unexpected and astonishing. Charcot clearly divined something of the nature of hysteria, when he drew an analogy between hysteria and hypnosis. Moebius, however, appears to have been the first to maintain that all of the symptoms of hysteria were of psychic origin. He pointed out that the hysterical person without being hypnotized reacts like a subject under hypnosis. It remained, however, for Babinski to make the next great advance, which was the recognition of the fact that the symptoms owe their origin to suggestion. We all recall Babinski's results in his 100 cases of hysteria, not previously examined by physicians, in which he failed to elicit the symptom of hemianesthesia in a single instance, and how this hemianesthesia is usually found on the left side of the patient because the physician making the examination is usually right-handed and, facing the patient, directs the patient's attention to the left side and suggests the very hemianesthesia he is trying to discover. The hemianesthesia is an artefact. It had no previous existence in the patient and was directly produced by the medical examination. What is true of hemianesthesia is true of all the other phenomena of hysteria. All are the result either of medical or of other suggestion.

Another point now becomes evident. If, testing a healthy or normal person for hemianesthesia, the physician makes at the same time free use of suggestion both direct and indirect, he invariably fails to develop the symptom. In other words, the normal person repels, the hysterical person accepts the suggestion. This vulnerability to suggestion is one of the most striking facts of the neuropathy of hysteria. The latter always preexists, is always innate in the individual.

Just as the reaction of the hysterical person to suggestion is so excessive as to be pathologic, so is his reaction to emotional stimuli excessive and pathologic. Exaggerated emotional reaction, exaggerated emotional expression, general emotional instability, are therefore likewise features of the hysterical neuropathy. In keeping with this fact, the hysterical person reacts inordinately to fright, joy, annoyance, anger, disappointment, mortification, fancied slights or wrongs, shame and kindred incidents. It follows as a physiologic corollary that the outward expression, the physical reaction, is excessive. Time alone forbids a detailed consideration of hysteria, but the latter may be safely defined as an innate neuropathy, the essential feature of which is a feebleness of resistance to mental impressions and an emotional instability; in other words, there is a pathologic vulnerability to suggestion and an exaggerated emotional reaction. Again, hysteria is a neuropathy of degeneracy. Hysterical persons are relegated with few exceptions to the ranks of the incapable. The hysterical woman makes an inefficient servant, an inefficient wife and houskeeper, an inefficient mother; the hysterical man, an inefficient workman, an inefficient provider for his family, an unsuccessful member of the community. Finally, hysteria presents a large element of heredity. Indeed, Charcot and his pupils regarded hysteria as always inherited; all other causes, to use Charcot's expression, have merely the value of *agents provocateurs.*

HYPOCHONDRIA

Out of the group of the neuroses we have now separated three well defined states: (1) neurasthenia; (2) psychasthenia, and (3) hysteria. A fourth now claims our attention, namely, hypochondria. Though Hippocrates does not use the term "hypochondria," it is quite old. Galen speaks of morbus hypochondriacus; other writers speak of hypochondriasis and associate the conditions with complaints of the stomach and of digestion. It was not, however, until the latter part of the eighteenth century that it was more definitely recognized. In 1765 Robert Whytt of Edinburgh, in his treatise on the nervous, hysterical and hypochondriac disorders, clearly separated it from the other two affections. He says: "The complaints of the first of the above classes may be called *simply nervous;* those of the second, in compliance with custom, may be said to be *hysteric,* and those of the third, *hypochondriac.*" We have here an instance of remarkable clarity of vision. In the middle of the nineteenth century French writers, beginning with Georget, recognized the mental character of the symptoms. German writers, Romberg, Griesinger, Schuele, Mendel, Jolly and many others followed. Time will not permit an analysis of the various views. For a time, hypochondria was confounded with hysteria and again with neurasthenia. Von Hoesslin was one of the first to differentiate it clearly from the latter affection, and in this he was followed by Mueller, Bouveret and others. Medical writers on the whole, however, have been loath to grant to hypochondria a definite position in our nosology, evidently for the reason that hypochondriacal states may occur in other affections, such as the prodromal periods of melancholia or of paranoia, or may complicate other mental diseases. On the other hand, hypochondria bears no relation to the nosophobia of neurasthenia nor to the suggested visceral phenomena of hysteria. Its symptoms owe their origin to a change in the general sense of bodily well-being, a change which gives rise to a more or less fixed conviction of illness.

The patient has a feeling of not being well, a feeling simetimes slightly pronounced but often so vivid as to dominate for the time being his life and actions. He usually seeks an explanation of his condition in the disease of one or more organs; most frequently he complains of manifold and distressing symptoms. The most careful clinical examination, it need scarcely be added, fails to reveal anything of moment.

Hypochondria occurs without the presence of a single symptom of the fatigue neurosis or of a single hysterical stigma. It occurs independently of melancholia, of paranoia or of the various demented states. Its symptom group occurs alone and pursues its own course. It is the expression of a diseased personality, of an abnormal condition inherent in the individual.

NEURASTHENIA SYMPTOMATICA

The foregoing considerations show that the neuroses resolve themselves into neurasthenia, psychasthenia, hysteria and hypochondria. A few words are demanded by the nervous symptoms which now and then accompany visceral disease. Serious bodily disease, of course, weakens the entire organism, and that various signs of nervous weakness should be present is but natural. The symptoms, however, are never those of the fatigue neurosis, of simple neurasthenia. For convenience, I have applied to them the term "neurasthenia symptomatica." The fact that bodily weakness is commonly associated with visceral disease has led some physicians to the erroneous conclusion that all neurasthenia is symptomatic, a position which the clinical facts, of course, abundantly disprove.

If neurasthenia is a physical condition, and if psychasthenia, hysteria and hypochondria are innate neuropathies, extraneous factors play no rôle in their causation. That, however, psychogenic factors may, especially in psychasthenia and hysteria, play a rôle in the details of the individual symptoms there can be no question. A psychogenic factor can play on or influence only a preexisting neuropathy. It cannot produce the latter. When a hemianesthesia is suggested in a case of hysteria, the suggestion is the psychogenic factor which develops the symptom; the suggestion, as we have seen, finds a ready soil in the hysteria and, in the absence of such a soil, fails of effect, that is, it fails to develop hemianesthesia in the normal person. That the psychogenic factor of suggestion frequently results in multiple symptoms and in special and often complex clinical pictures in hysteria there can be no doubt.

In psychasthenia, the special symptoms may consist merely of profound exaggerations of the general symptoms encountered in simple neurasthenia. The diminished force of the neurasthenic may express itself in a neuropathic subject as a profound impairment of will, an abulia; the lessened spontaneity and lessened ease of decision may amount to a pathologic indecision, a folie de doute; the lessened inhibition may result, as I have pointed out, in special movements, gestures and tics, while the timidity and general fear may result in special fears and obsessions. As in the case of hysteria, psychogenic factors cannot produce the neuropathy of psychasthenia, but, as in hysteria, they may result in the production of special symptoms and of complex clinical pictures.

The foregoing consideration of the neuroses leads to a simple and natural classification, a classification which, as we have seen, was largely anticipated by Robert Whytt over a century and a half ago. The neuroses arrange themselves naturally into neurasthenia, psychasthenia, hysteria and hypochondria. Neurasthenia is the result of exhaustion; psychasthenia of exhaustion occurring in a neuropathic subject; hysteria and hypochondria are both innate neuropathies, each defined by its own special characteristics.

Psychogenic factors play no rôle whatever in neurasthenia. In psychasthenia and hysteria they may lead to the production of symptoms which feature the individual case. In hypochondria they play little or no rôle, the symptoms being almost altogether autogenous. In conclusion, it should be emphasized that the neuroses are physical, biologic and neuropathic in origin, and that psychogenic factors, when they play a rôle, do so merely in the surface manifestations.

1719 Walnut Street.

RADIUM IN THE TREATMENT OF CARCINOMA OF THE BLADDER AND PROSTATE

REVIEW OF ONE YEAR'S WORK *

B. S. BARRINGER, M.D.
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FOREWORD BY DR. KEYES

The results achieved by Dr. Barringer in the control of malignant disease of the prostate and bladder by the application of radium (unconfirmed though they be by the lapse of a number of years) are nevertheless striking and offer a prospect of amelioration and a possibility of cure for early and circumscribed neoplasms such as has not before been claimed for any physical agency.

In view of the skepticism which will naturally be aroused by these claims, I feel the obligation of intruding my concurrence.

The condition of Prostatic Cases 1, 3, 9 and 10 has been observed by me, both before and after treatment by radium. The condition of Prostatic Cases 5, 8 and 12 I have noted only after treatment. These observations, though few, are sufficient to justify Dr. Barringer's claim to have checked the growth of prostatic carcinoma in apparently incipient cases for periods varying from a few months to a year. Whether this check has amounted in any of these cases to a total destruction of the carcinoma within or about the prostate, or whether there has simply been a temporary regression, cannot be known at the present time. We know only that the major lumps have been absorbed, and that in many instances the remaining irregularities in the prostate are such that they cannot be distinguished from scars. Moreover, the improvement in the condition of these patients, as evinced by the relief of pain and the increase in weight, is truly remarkable.

I have also observed a regression in three cases of bladder carcinoma, all of which had been vainly treated by fulguration, two of which (Cases 6 and 16) were at the time of treatment flat and sloughy in type, and all of which had been diagnosed as carcinoma by pathologic examination of pieces removed by the cystoscopic forceps, after the last fulguration.

E. L. Keyes, Jr., M.D.

RESULTS OF RADIUM TREATMENT

The least that can be said of the result herewith published of radium treatment of carcinoma of the prostate is that radium has produced a marked relief of the symptoms and diminution in the growth, if not a total disappearance of it in certain cases, and this in cases in which the carcinoma had exceeded the limits of the prostate gland — a condition in which it is recognized that surgery is impotent.

The superiority of radium in the treatment of carcinoma of the bladder is not so clear because of the cures that have been alleged from surgical treatment of this condition in its various stages. But with radium we have obtained local cures of flat, sloughy carcinomas of the bladder which, according to the surgical theories of today, would have required resection of the bladder for their removal. Unless these cases promptly recur (which they have not done up to the present) we are therefore in a position to state that we have with the placing of a tube of radium in the bladder for a few hours achieved as much as the surgeon does by a capital operation.

YEAR'S WORK IN CARCINOMA OF THE PROSTATE

1. Radium treatment has caused with surprising regularity the reduction or disappearance of carcinomatous nodules of the prostate. Striking results have been obtained both in early and in advanced cases (Cases 1, 3, 5, 8, 9, 10 and 12). The early cases, those in which the carcinoma is fairly well confined to the prostate and in which there is little or no perivesicular infiltration, all show a shrinkage of the carcinoma.

2. The reduction which occurs in carcinomatous lobes is, as far as has been observed, permanent. One case has been followed ten months; two for six months, and more recent cases but one or two months after the reduction.

3. The symptoms in those cases in which the carcinoma has been reduced generally show striking improvement (Cases 1, 3, 8, 9, 10 and 12). This symptomatic improvement is evidenced in increase in weight and strength, decrease in frequency of urination, and return of or improvement in erections. One patient of 74 years, on whom a suprapubic exploration showed carcinoma of the prostate, and who was treated but once with radium, gained 8 pounds, and reported five months later that he was then "doing a full day's work on steam boilers." He narrated on questioning that a full day's work was from 5 a. m. to 11 p. m. Another (Case 1) who had had no erections for one and one half years, had a permanent return of this function. This patient, who had been invalided, gained from 16 to 18 pounds, started in mild work "shoveling snow and lifting ash cans," and now is doing a full day's work in a machine shop, one year after his first treatment.

4. I have not departed from the technic used in my first case one year ago. Different strengths of radium have been used, but the application is the same. The radium is placed in the end of a needle extending from the tip from 1 to 1½ inches along the shaft. These needles[1] are from 4 to 6 inches long, and are inserted through the perineum into the prostate or further into the perivesicular sheath. Anesthetization of the perineum and the prostate with 0.5 per cent. novocain and epinephrin makes the insertion of these needles practically painless. Little or no pain is felt during the sojourn of the needle (about twelve hours), and the patient can either urinate or be catheterized. This means at most but twenty-four hours in the hospital.

The radium so used is practically unscreened, but *the maximum effect of the radium takes place directly in the center of the carcinomatous nodule.*

The patient usually has pain in the prostate and urinary frequency, beginning about three days after irradiation, and lasting a number of days. In some of the cases in which I have used large doses the reaction has been severe and has lasted several weeks. I believe that lesser doses are about as effective and not so painful. Nearly all of my patients have been irradiated only once in two or three months and no second treatment is given until the effect of the first is entirely over.

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[*] From the service of the Memorial Hospital.

[*] Read before the Genito-Urinary Section, New York Academy of Medicine, Nov. 15, 1916.

[*] Owing to lack of space, this article is abbreviated in The Journal by omission of a number of case reports. These will be included in the reprints, a copy of which will be sent by the author on request.

[1] I am now having gold needles made. These will form a better screen than the steel needles.

5. The primary effect of the radium may be to increase the amount of the residual urine. The ultimate effect of the radium application on residual urine is probably nil, the amount neither increasing nor decreasing. Hence those patients who have chronic retention of urine require either the catheter or operation in addition to irradiation. It would seem wiser not to operate until the carcinomatous prostate had at least been given one dose of radium.

6. No sloughs have resulted from the radium needles.

7. Radium apparently has a selective action on carcinoma. I conclude this from descriptions by Dr. James Ewing of carcinomas examined after radium treatment, and from my own experience.

I have used radium on a hypertrophied prostate with absolutely no effect, neither burning nor shrinkage occurring; yet the same amount of radium would markedly reduce a carcinomatous lobe. I have had a similar experience in a case of chronic contractive fibrosis of the corpora cavernosa, barring the fact that the radium caused a superficial burn of the penis.

8. The pathologic examination of a prostate removed five months after irradiation is of interest (Case 5). The prostate was removed because of retention of urine. Only one treatment was given this patient because he was old and very feeble. The prostate had been considerably reduced in size following the radium treatment. At operation the prostate shelled out like a nonmalignant adenoma. Dr. Ewing's report is as follows:

> Material consists of several lobulated opaque portions of prostate making a mass as large as a hen's egg. Much of this has the honeycomb appearance of chronic prostatitis. But some areas are very firm and solid. Two such areas, size of bean, were sectioned. The main tissue of the gland shows lesions of chronic prostatitis with dilated glands and feeble epithelial proliferation. The solid areas show fibers of muscle tissue separated by rows of small epithelial cells with hyperchromatic nuclei. The appearance is that of diffuse carcinoma in a state of fibrosis. One area of adenocarcinoma is found in the center of a fibrosed area. There is no necrosis.
>
> In view of the history the diagnosis may be made of carcinoma, diffuse and adeno, arising on prostatitis, and undergoing atrophy and fibrosis from radium.

9. As far as I have observed, clinically all of the cases treated are of about the same degree of malignancy. There is a class of cases of prostatic carcinoma, however, of marked malignancy. In these the primary focus in the prostate is often overlooked, and the patient comes to be treated for his secondary focus. There have been two such cases at the Memorial Hospital in both of which there was a large carcinoma of the neck, and it was only by routine examination in one case and necropsy in the other that the primary focus in the prostate was found. Such cases are apparently very malignant, and it is a question if we would ever get them early enough for any treatment to count.

10. Very large carcinomas accompanied by cachexia and loss of weight on the part of the patient are beyond radium and any other treatment.

11. The first year's work has not revealed what, if any, cases have been cured. Time alone will answer that question. To carry my work further, therefore, with the hope of really curing some cases, I am attacking the paths of metastasis, the perivesicular lymphatics with longer needles which are inserted through the perineum and prostate high up along both seminal vesicles.

SUMMARY OF PROSTATIC CASES

Seventeen cases of prostatic carcinoma have been treated. The seventeen cases may be roughly divided as follows:

Advanced Cases.—Eight of the cases (2, 4, 7, 8, 9, 10, 11 and 13) were hopeless; in two of these (Cases 8 and 9) the carcinoma had invaded the bladder. Two patients have died (Cases 2 and 4). Two (Cases 7 and 11) are going down hill. One has been lost track of; seven months after a single treatment, however, I heard that he was up and working. Three (Cases 8, 9 and 10) are improved. In two of these the diagnosis was confirmed by microscopic examination (Dr. Ewing). In the first, the prostatic carcinoma has almost disappeared and the carcinomatous lump which projected into the bladder has about gone. The second patient has gained about 14 pounds in weight, goes from four to six hours without urinating, has good erections, and his carcinoma, with the exception of a small lump remaining in the right vesicle, has disappeared. The third patient looks well, urinates less frequently at night, and has no residual urine, as against from 2 to 3 ounces before the radium treatment.

Early Cases.—Nine of the seventeen cases (Cases 1, 3, 5, 6, 12, 14, 15, 16 and 17) were, roughly speaking, fairly early. This does not mean that they were suitable for operation. As a matter of fact, because of the initial success of radium treatment I now take the stand that no patients with prostatic carcinoma should be operated on. The diagnosis of carcinoma was confirmed by microscopic examination in four of these nine cases. Five of the nine have been too recently treated to report in detail. The remaining four (Cases 1, 3, 5 and 12) have much improved as far as the prostate goes, and three have improved symptomatically. One has gained 16 pounds, and has no night frequency, as against from three to four times, and works a full day, as against no work. One gets up at night not at all as against from three to four times, and has had no catheterization since the radium treatment (eight months ago); whereas before treatment he had one or more attacks of acute retention. One has gained 5 or 6 pounds, and has come back to a full day's work (from 5 a. m. to 11 p. m.) on steam boilers. The fourth patient did not improve symptomatically because of his urinary retention. This patient's prostate was removed five months after irradiation, and he is now recovering from his operation.

BLADDER CARCINOMA

My statistics in bladder carcinoma, viewed from different points of view, are both good and bad — bad because five of sixteen patients treated have died[2] and three are rapidly getting worse. The fact that in the first year I have treated nearly every patient sent to me, and that thirteen of the sixteen cases were advanced carcinoma, explains these statistics.

I consider the results good because four cases of carcinoma of the bladder (three advanced, one early, Cases 2, 6, 10 and 16), three confirmed microscopically as carcinoma (Dr. Ewing), have been cystoscopically proved cured, one for ten and one half months, one for five months, and two recently.

These few cases have so impressed me that I believe the cure[3] by radium of carcinoma of the bladder depends on two conditions: first, to get cases early enough, and, second, actually to apply the radium to the carcinoma.

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[2] Two as a result of transplantation of the ureters because of intolerable pain.

[3] Cure as far as the bladder is concerned; it is too early to speak of permanent cure.

Application of Radium in Bladder Carcinoma.—The technic of the application of the radium has been outlined in my preliminary report.[4] A capsule of screened radium (0.6 mm. of silver and 1 mm. of rubber) from 100 to 200 mc. is placed in the bladder through the sheath of the cystoscope and allowed to remain there from six to ten hours. As 90 per cent. of bladder tumors are on the bladder base, the radium so inserted is in close contact with the tumor. If the carcinoma is on the vault or lateral walls, the patient lies on his abdomen or on one or the other side. After the treatment the radium is removed through the urethra by a linen thread attached to the tube.

In my year's work I have seen no reason to depart from this technic. The initial pain experienced is only that of the cystoscopy. The after-burn varies from none at all to more or less severe pain beginning a few days after treatment and lasting from one day to several weeks.

In extensive carcinoma involving the bladder, sphincter irradiation may greatly increase both the pain and the urinary frequency. It is to be used in these cases with caution.

CASE REPORTS OF PROSTATIC CARCINOMA[5]

Case 1.—J. C. D., aged 59, complained chiefly of loss of flesh and strength, and night urinary frequency, from three to four times for four months. He had had pain in the right thigh for five years. Prostatic examination (with Dr. Keyes) revealed a large, hard, fixed, irregular prostate, each lobe of which was about as large as an English walnut; the left lobe was more prominent than the right, and there was little extension toward the seminal vesicles. Radium treatment was given, Oct. 20, 1915, 50 mc. for six hours in each lobe.

November 17, the patient reported that he had considerable burning after the treatment, and that he had a number of erections since (erections had been lost for one and one-half years). The prostate felt the same.

Jan. 14, 1916, the patient had gained about 10 pounds; he felt fine; erections had diminished. Examination of the prostate (with Dr. Keyes) revealed marked shrinking of the carcinoma. Dr. Keyes said that it was more the slight irregularity of the prostate than anything else that suggested carcinoma. I gave the patient 60 mc. of radium for four hours in both lobes.

January 31, he had gained about 6 pounds more, making 16 in all. He had had no pain from the radium, and rose once at night to urinate.

February 18, he did not get up at all at night to urinate, and had gained 2 pounds in weight. There was slight induration at the base of the prostate, and the right lobe was treated for eight and one-half hours with 38 mc. of radium.

April 4, treatment with 75 mc. was given the right lobe for four hours, and then the left lobe for four hours.

November 7, he had been working in the machine shop for six months, and had lost a couple of pounds. He had had some burn after the radium, which had caused an increase in night urination (from three to four times). In the center of the left lobe there was a small, fairly hard lump, and a slight, hard ridge in the right lobe. The patient's condition was fine.

Case 9.—M. H., aged 65, had a sloughy, pedunculated carcinoma removed from the neck of the bladder by Dr. Keyes. This grew from the prostate, no removal of which was attempted. The pathologic examination (by Dr. Ewing) was thus reported: "The section is from a mass of tumor tissue 1.5 cm. in diameter. It shows a solid carcinoma composed of small and large groups of compact tumor cells, with very little stroma. The cells are of medium size, polyhedral, with hyperchromatic nuclei. The vessels are scanty. There is no necrosis. It is impossible to state from the section whether there is any infiltration of the bladder wall. In structure the tumor is a fully developed carcinoma."

June 6, the right lobe of the prostate, which had a hard ridge, was treated with 93 mc. of radium.

July 5, there was slight burning after the radium; the lump in the prostate was the same.

September 12, the patient did not have to rise at night. He went from four to six hours without urinating. He had gained 15 pounds. The lump in the right lobe was about gone. Drs. Keyes and Jeck saw it as infiltrations running up into the right vesicle. This is to be treated with radium.

Case 12.—F. S., aged 74, was operated on at Mount Sinai Hospital, and carcinoma of the prostate was found. When I first saw him he had a night frequency of three times, and the right lobe of the prostate was small, hard and irregular.

June 29, this lobe was treated with a radium needle of 86 mc. for four and a half hours.

October 29, the patient still urinated from three to four times at night; he had a good appetite, had no pain, and worked from 5 a. m. to 11 p. m. on steam boilers. He reported having had but little burn from the radium. The prostate was flat and somewhat irregular with some induration beyond the prostate across the bladder base. No carcinoma was palpable in the prostate. (Examination was made with Dr. Keyes.)

CASE REPORTS OF BLADDER CARCINOMA[6]

Case 2.—C. A. G., woman, aged 69, complained chiefly of urinary frequency for the past year, at night three or four times, during the day every three or four hours, and pain following urination. She had been passing bloody urine for the past four months. A number of months before I saw her, cystoscopic examination had been made, with a diagnosis of inoperable carcinoma. Cystoscopy revealed a large red carcinoma with necrotic patches on the left side of the bladder obscuring the left ureteral orifice. The tumor was probably as large as a half dollar. The specimen removed was thus described (by Dr. Ewing): "The section is of a small mass of tumor tissue 2 mm. in diameter. It shows the structure of a small alveolar carcinoma, much inflamed, with dilated blood vessels. The cells are cleared, irregular in size, with large hyperchromatic nuclei, and arranged in small groups. The stroma is scanty."

Jan. 19, 1916, 100 mc. of screened radium were placed in the bladder and allowed to remain for eight hours.

February 4, she reported that she had had some frequency and severe bladder pain for two days; then everything was normal. Cystoscopy (performed with Drs. Keyes and Jeck) revealed that the tumor had gone, the area was covered with normal mucous membrane, and the ureter was visible.

July 6, she had gained from 4 to 5 pounds, and had a slight cystitis due to a cystocele, but there was no tumor.

December 19, she had a stellate white scar over the place occupied by the tumor. No tumor was visible.

Case 6.—C. T., man, aged 59, eight months before being seen had occasional painless hematuria. Cystoscopy revealed papilloma near the left ureter. This was burned with the high frequency current four times in about six months, but had always recurred. Dr. Keyes saw it in January, 1916, when it was an ulcerated area with carcinomatous looking lumps. A piece removed was thus described (by Dr. Ewing): "The section is from a mass of tumor tissue 5 mm. in diameter. It presents a small alveolar and diffuse carcinomatous structure. The cells are extremely atypical, and some are of very large size, with very hyperchromatic nuclei. The outer portions are hydropic, the central areas show fibrosis, and here the tumor cells run in narrow rows or small groups."

Feb. 11, 1916, 214 mc. of screened radium were inserted for seven hours.

May 2, cystoscopy revealed normal mucous membrane over the space occupied by the carcinoma. The patient had had seven or eight erections since treatment, while he had been practically impotent for ten years before.

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[4] Barringer, B. S.: The Treatment by Radium of Carcinoma of the Prostate and Bladder, The Journal A. M. A., Nov. 11, 1916, p. 1442.

[5] Treated from October, 1915, to October, 1916.

[6] Treated from October, 1915, to October, 1916.

In July, he had gained 10 pounds. Cystoscopy (by Dr. Ballenger) was negative.

November 8, Dr. Ballenger reported that he "had passed no more blood. Cystoscopy about a month ago showed only a reddened place where the growth was. There has been a rather persistent cystitis."

Case 16.—J. A. H., man, aged 62, had had two attacks of total hematuria, one month and eight days before he was seen. There were no night frequency and no loss of weight. Dr. Keyes saw by cystoscopy a red, lobulated, rather flat carcinoma above the right ureter; he burned it with the high frequency current and advised radium. The patient went to another physician, who fulgurated the tumor and decided against both operation and radium. About three months later he returned when (on examination with Dr. Keyes) a flat carcinoma, sloughy in part, two or three times the original size, was revealed, extending from the bladder neck to a point 2 cm. above the right ureter. It had raised, thick, indurated edges. A specimen removed revealed carcinoma (Dr. Ewing). Two tubes of screened radium (one 90 and one 89 mc.) were left in the bladder six hours.

Two months later the patient returned, when redness of the right side of the bladder was seen and a small ulcer back of the ureter (well away from where the tumor was) probably due to radium burn. *No other lesion was seen.*

SUMMARY

Three out of eight patients with advanced carcinoma of the prostate have been markedly improved. In three out of four early cases the patients have been relieved of their symptoms, and the growth has so far shrunken as hardly to be appreciable by the finger. Moreover, four patients with bladder carcinoma appear to be cured by the use of radium. Of course I use the word "cured" in a restricted sense, but radium has done for these patients what no other agent short of operation could possibly have done, while for the prostatic patients it has done much more than operation could have done.

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THE ABSORPTION OF APOMORPHIN AND MORPHIN THROUGH THE CONJUNCTIVA *

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While surgeons, gynecologists, and even authorities on internal medicine have on frequent occasions looked with little faith on the efficiency of drug medication, an attitude of drug nihilism cannot be imputed to the ophthalmologist. Indeed, some of the most important pharmacologic contributions have been in the field of ophthalmology, and some of the most strikingly beneficial therapeutic effects have been produced in the treatment of eye conditions. We need but mention the employment of atropin, cocain, physostigmin, epinephrin and many other mydriatics, miotics, astringents, analgesics and antiseptics.

When we consider the highly developed blood and lymph supply of the eye and its appendages, especially the patent tear ducts, it is surprising that so few cases of drug absorption and intoxication through them are on record. So few are the cases found in the literature that many physicians deny the possibility of such absorption through the conjunctiva and the lacrimal apparatus, and attribute the poisoning in such cases to the careless administration of the drugs and to their absorption through the mouth of the patient.

A careful examination of the literature, however, will soon establish the authenticity of such poison cases. Thus, for instance, systemic poisoning by cocain through absorption from the eyes has been not infrequently observed. An interesting summary of such cases has been published by Falk.[1] That author collected reports of twenty cases of such poisoning. In one of them, a boy, aged 14 years, was severely poisoned by the instillation of 1 drop of 1 per cent. solution of cocain. In another case, a man, aged 40, suffered a collapse and respiratory failure after the instillation of 2 drops of a 4 per cent. solution.

Systemic symptoms from instillation of atropin into the conjunctival sac are even more frequent than those from cocain, and have been reported by Feddersen,[2] Lewin,[3] von Jaksch,[4] Blyth,[5] Kunkel[6] and other toxicologists as well as by many ophthalmologists.

In connection with pharmacologic investigations on opium alkaloids, which I have been conducting for some time past, an interesting observation was made which strikingly establishes the fact that certain drugs can be quickly absorbed through the conjunctiva.

If a few milligrams of apomorphin hydrochlorid are sprinkled into the eye of a dog and the animal is held still for a minute or two in order to allow the drug to dissolve, emesis follows in from two to five minutes.

The same phenomenon is produced by the instillation of a few drops of a 1 or 2 per cent. solution of apomorphin hydrochlorid. I have been able to produce a state of vomiting by the instillation or dusting of apomorphin into the conjunctiva, in every case in which it was tried. In all the experiments, care was taken to eliminate any possibility of the animal's absorbing the drug by licking. Furthermore, the experiments were repeated also on animals under anesthesia, and in a moribund state after prolonged operations; even in those cases retching movements followed the administration of apomorphin through the eye.

As vomiting is produced in dogs almost as easily with morphin as with apomorphin, experiments were also made with instillations of morphin solutions and insufflations of morphin powder into the conjunctival sac; here again emesis followed, although after a somewhat longer interval (five or more minutes).

It may be well to call attention to the fact that in the experiments described above, which were made on normal dogs, no cruelty was practiced, as I have quantitatively shown, in my work with Johnson and Bollinger,[7] that the opium alkaloids have a slightly analgesic, local effect on mucous membranes.

I have had no experience with local applications of apomorphin or morphin on human subjects, nor do I recommend such practice. The foregoing experiments, however, should serve to emphasize the possibility and importance of drug absorption through the conjunctiva, and to render the ophthalmologists more cautious in the employment of toxic alkaloids.

Further experiments now in progress seem to indicate that the absorption of the foregoing drugs takes place through the blood and lymph channels, and not altogether through the nasal duct. The full data will appear in due time in the *Journal of Pharmacology and Experimental Therapeutics.*

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* From the Pharmacological Laboratory, Johns Hopkins University.

[1] Falk: Therap. Monatsh., 1890, 4, 511.
[2] Feddersen: Diss., Berlin, 1884.
[3] Lewin: Nebenwirkungen der Arzneimittel, 1910.
[4] Von Jaksch: Die Vergiftungen, 1910, p. 471.
[5] Blyth: Poisons, 1906, pp. 358, 385.
[6] Kunkel: Handbuch der Toxicologie, 1901, p. 706.
[7] Macht, Johnson and Bollinger: Jour. Pharmacol. and Exper. Therap., 1916, 8, 451.

LUMBAR PUNCTURE FOR THE RELIEF OF DELIRIUM IN LOBAR PNEUMONIA

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and
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In pneumonia, delirium is usually a symptom indicative of a severe infection. The respiratory and vasomotor systems are as a rule, though not necessarily, also affected by the severity of the toxemia, of which the delirium is the most obvious manifestation. The control of this delirium in most cases is necessary in order to avoid throwing a greater strain on the heart than would occur under ordinary circumstances in the infection. A wild, uncontrollable delirium is dangerous, not only because it presumably indicates a severe toxemia, but also because it may rapidly exhaust the patient through muscular exertion. In spite of the exhausting effects of delirium, the usual remedies recommended for its control are distinctly depressant. Such an effect may be desirable, as in delirium tremens when the delirium is not associated with a virulent infection, such as pneumonia, which may overwhelm the patient at any time. To give depressing drugs when the chief indication for treatment is to support and maintain the patient seems irrational. The usual methods advocated by various authorities[1] on pneumonia for the control of delirium include hydrotherapy primarily, and if this fails, drugs, such as bromids, chloral and the like. Morphin is advocated only in the severe types of delirium, though it probably has a less depressing and harmful effect than the former drugs. In none of the standard works could we find lumbar puncture advocated, nor in a review of the current medical literature for the past four years could we find any reference to it as a measure to control delirium in pneumonia, though it has undoubtedly been employed. Roger and Baumel,[2] however, recommend it for the alleviation of headache in pneumonia. The relief of delirium by lumbar puncture is naturally suggested by the results that have been achieved in delirium tremens. In this condition there is a marked increase in intraspinal tension, as shown by Schottmüller and Schumm.[3] Assuming this to have some relationship to the delirium, Steineback[4] systematically employed lumbar puncture for the treatment of delirium tremens with excellent results. Lumbar puncture apparently not only relieves pressure but also removes a certain amount of toxic substances. The author recommends a further dilution of these substances by injection of physiologic sodium chlorid solution in amounts equivalent to the fluid removed. Another factor is that in delirium tremens there is a greater hydration capacity of the brain than normal.[5] Presumably the removal of the fluid under pressure within the meninges lessens the possibility of greater absorption of fluid, and consequently decreases the production of delirium.

By analogy with delirium tremens, the rationale of removal of excess spinal fluid in pneumonia may be justified. It appears that the most common theory of the pathogenesis of delirium in delirium tremens is that the increased intraspinal pressure is responsible for the delirium rather than cerebral congestion, for example. In pneumonia there is no evidence of bacterial invasion of the meninges, excepting, of course, when there is a true pneumococcic meningitis; the fluid is sterile when cultures are taken. It is presumable that in a certain number of cases the pneumococcic toxins may have a greater affinity for the spinal membranes than in other cases. Such cases respond to the irritation of this toxin by the secretion of increased amounts of fluid by the choroid plexus. As a result of this the usual channels of escape are blocked up and the increase of pressure causes changes in the brain cells with the subsequent delirium. To relieve this it is obvious that lumbar puncture is indicated.

In the series of cases reported, this result was promptly and immediately attained. Large amounts of fluid were withdrawn in only two cases, and it is fair to presume, therefore, that in addition to the relief of pressure, as in delirium tremens, there was the added factor of escape of toxins probably more or less concentrated.

CLINICAL NOTES

During December, 1916, and January, 1917, an unusual number of lobar pneumonia patients were admitted to the men's medical ward of the Presbyterian Hospital. Several were delirious on admission or developed delirium soon after entrance to the hospital, and it is this series of cases that particularly interested us.

The first patient was wildly and uncontrollably delirious on entering the ward, and at the suggestion of Dr. Sailer, to whom we are indebted for permission to report these cases, we were led to attempt a spinal puncture in an effort to control the delirium. The puncture was done, fluid flowed under marked pressure, and within an hour or two the patient became quiet, his delirium diminished greatly, and he was able to sleep intermittently.

Stimulated by this success, we continued treating the delirious pneumonia patients by lumbar puncture, and without any exception brought about a marked diminution if not an absolute cessation of their delirious condition.

The patients who developed delirium after admission to the hospital did so gradually, the delirium being preceded by increasing nervous symptoms. The patellar, biceps and triceps reflexes were always increased, and in one case Kernig's sign was present. The gradually increasing restlessness and irritability developed into delirium, which became more marked as the disease progressed. Although the nervous signs led us to watch for delirium, we always waited for the delirium as an indication for the puncture.

It was our habit to attempt to control the restlessness preceding the delirium by sedatives, morphin as a rule, usually with only partial success. After a puncture, however, the patient became quiet, was able to sleep, and sedatives could be dispensed with. The puncture in itself, contrary to our expectations, caused the patient only slight discomfort. Only a few complained of pain, and these were not markedly upset by the procedure. None of the patients showed any immediate untoward effects as a result of the operation.

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[1] These authorities include:
Hare, H. A., in Musser and Kelly: Practical Treatment, Philadelphia, 1911, p. 277.
Ortner: Treatment of Internal Diseases, Philadelphia, 1913, p. 309.
Musser and Norris, in Osler: Modern Medicine, Philadelphia, 1907, p. 566.
Osler, W. A.: Principles and Practice of Medicine, New York, 1912, p. 101.
Goodall: Index of Treatment, London, 1916, p. 363.

[2] Roger and Baumel: Rev. de méd., 1915, **33**, 42.

[3] Schottmüller and Schumm: Neurol. Centralbl. 1912, **31**, 1020.

[4] Steineback: Deutsch. med. Wchnschr., 1915, **41**, 369.

[5] Nuzum, Frank, and Le Count, E. R.: The Ability of Brain Tissue to Take up Water in Delirium Tremens and Other Conditions, The Journal A. M. A., Dec. 16, 1916, p. 1822.

At first the fluid came from the needle under pressure, often flowing in a steady stream which rather rapidly decreased to a normal flow. We did not limit ourselves to a definite amount, but allowed the fluid to escape until the rate reached normal.

In one case the delirium apparently began to return, leading us to repeat the puncture; here there was no excessive pressure to the flow, and only a small amount was withdrawn. The symptoms increased no further, and the patient went on toward recovery.

It is interesting to note that in the seven cases of delirium, four patients died, two developed empyema, one of these showing also myocardial weakness, and the remaining one had unresolved pneumonia with a greatly prolonged convalescence. In the cases which terminated fatally, death seemed to be the result of an overwhelming toxemia rather than a cardiac failure. The cases in which the patients recovered were extremely severe in type, and during the course of the disease the prognosis was so unfavorable that a successful termination was not expected.

REPORT OF CASES

Case 1. (H-64017).—The patient was admitted to the ward, Dec. 19, 1916, with lobar pneumonia of the left lower lobe of four days' duration. He was delirious on admission to a wild and maniacal degree. Two days after admission, lumbar puncture was performed. The fluid was under considerable pressure; 30 c.c. were removed. No laboratory report was made, as the test tube was broken. The delirium greatly diminished, changing from a wild, active type to a low muttering. The patient died, Dec. 23, 1916.

Case 2 (F-64061).—The patient was admitted, Dec. 22, 1916, with lobar pneumonia of the right middle and lower lobe of two days' duration. He developed a marked delirium four days later and a severe headache. Lumbar puncture was performed on the eighth day of the disease; 65 c.c. of clear fluid were removed under great pressure. The laboratory reported that it was sterile, with negative Noguchi and Rivolta tests. The delirium was almost immediately relieved, and improvement in the general condition was marked. The patient developed empyema, was operated on, and was cured.

Case 3 (C-64074).—The patient was admitted, Dec. 25, 1916, with no obtainable history. There was lobar pneumonia of the left upper lobe. He was widly delirious on admission. Lumbar puncture was performed three days later; 35 c.c. of clear fluid under marked pressure were removed. The laboratory reported that it was sterile, with negative Noguchi and Rivolta tests. A note made on the day after rachiocentesis said: "Immediately after tap patient quieted down. He is now semiconscious, sleeps intermittently and is neither restless nor delirious. General condition not improved." Death occurred, Dec. 30, 1916.

Case 4 (C-64128).—The patient was admitted, Dec. 29, 1916, with lobar pneumonia of the right middle lobe of two days' duration. January 3, he was very restless and irrational; spinal puncture was performed, and 30 c.c. of clear fluid under pressure were removed. The laboratory reported that it was sterile, with faintly positive Noguchi test and negative Runeberg. Four hours after puncture, the patient was much less restless and was sleeping. There was no further delirium. The pneumonia was unresolved for several weeks, but eventually cleared up.

Case 5 (H-64151).—The patient was admitted, Dec. 31, 1916, with pneumonia of the right upper lobe of one day's duration. He was irrational and delirious, the next day. Lumbar puncture was performed, January 3, as the delirium showed no improvement; 30 c.c. of clear fluid were removed under considerable pressure. The laboratory reported that it was sterile, and the Noguchi test negative. The patient's condition the next day was worse, but he was entirely rational and much more quiet. Death occurred, Jan. 5, 1917.

Case 6 (A-64200).—The patient was admitted, Jan. 6, 1917, with pneumonia of the right lower lobe of one week's duration. He had been irrational and delirious for two days preceding admission. Lumbar puncture was performed, the day following admission; 25 c.c. of clear fluid were removed under slight pressure. It was sterile, and the Noguchi test positive. Runeberg was negative. The patient was quiet after the rachiocentesis, and the delirium disappeared. He slept well. He died in coma, Jan. 13, 1917.

Case 7 (A-64).—The patient was admitted, Jan. 14, 1914, with lobar pneumonia of the left lower lobe, of three days' duration. Wild, noisy delirium developed two days after admission. Spinal puncture was performed twelve hours later; 45 c.c. of clear fluid under considerable pressure were removed. The laboratory reported a culture of *Staphylococcus albus* (contamination?) grown from the fluid; the Noguchi test was positive. After the rachiocentesis, the patient quieted down markedly. Two days later, restlessness and delirium returned with the appearance of parotitis. Spinal puncture was repeated, and 4 c.c. were removed, not under pressure. The patient improved steadily in his general condition from this date on, but developed an empyema which required operation.

SUMMARY AND CONCLUSION

In seven cases of pneumonia associated with severe delirium, relief of the delirium promptly followed spinal puncture. The mortality rate was high, but as delirium is usually an indication of a severe infection, we feel that lumbar puncture offers a ready aid in controlling one of the symptoms which may so aggravate the patient's condition that what little chance he may have of surviving the infection would be lost were it not for this procedure. Lumbar puncture is suggested as a measure to control a severe symptom, and not for any direct curative purposes.

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THE RELATION BETWEEN DIABETES MELLITUS AND CLINICAL SYPHILIS

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The recent work of Warthin and Wilson[1] has stimulated interest in the question of coincidence of latent syphilis and diabetes. They report that in six necropsies in cases of diabetes, all presented histologic changes of syphilis; in four of them, spirochetes were found in the myocardium, and in one of these cases, in the pancreatic lesions. They also report that the pancreas in forty-one cases of latent syphilis already reported by Warthin[2] showed marked changes, and conclude that "latent syphilis" is the chief factor in the production of the form of pancreatitis most frequently associated with diabetes, but that diabetes is not always coincident with severe degrees of this type of pancreatitis.

For several years, I have been interested in the possible relationships between clinically demonstrative syphilis and diabetes, and have studied the cases of diabetes encountered in practice in regard to this relationship. The data are presented in this paper.

It is quite possible that syphilis might cause diabetes by producing a specific lesion of the brain, especially of the medulla. Syphilitic arterial disease with secondary nervous lesions in the region of the fourth ventricle, or a gumma in this part would also be capable of producing diabetes. Again, syphilis might produce diabetes by causing disease of the blood vessels of the pancreas and secondary disease of pancreatic gland tissue.

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[1] Warthin, A. S., and Wilson, U. F.: Am. Jour. Med. Sc., 1916, **152**, 157.

[2] Warthin, A. S.: Am. Jour. Med. Sc., 1916, **152**, 508.

Von Noorden[3] mentions cases of glycosuria reported to have been cured by treatment with mercury and iodids.

F. Hirschfeld[4] found that 6 per cent. of his cases of diabetes could be claimed to be on a syphilitic basis. Von Noorden[5] discovered 1.2 per cent. of male diabetics, under 20 years, were syphilitic, 7.1 per cent. of male diabetics, over 20 years, and 2.3 per cent. of female diabetics, of various ages. Sarra's[6] statistics are about the same. Scheinmann,[7] Neumann,[8] Ehrmann[9] and Lombroso[10] have also published reports on the relation between diabetes and syphilis.

Ord[11] has recorded several cases in which glycosuria has been found in patients presenting the ordinary general symptoms of constitutional syphilis.

Feinberg[12] has reported three cases of diabetes and one of glycosuria which were apparently of syphilitic origin. These were all cases of nerve involvement and were under antisyphilitic treatment; recovery occurred in one of the cases, improvement in the other two, but in the case of glycosuria no definite improvement followed.

Williamson,[13] in 100 cases of diabetes, obtained a history or indication of previous syphilis in six cases, and found in these no reason to regard syphilis as the cause of the diabetes. Walker and Haller[14] reported seven positive Wassermann reactions in eighty-nine cases of diabetes, and obtained a history of syphilitic infection in a majority of these seven cases.

The accompanying table shows that of the sixty-two cases of diabetes mellitus studied, there is positive evidence of syphilis in seven, or 10.3 per cent. Five of these seven patients were persuaded to take syphilitic treatment. There was no increase in tolerance for carbohydrate in any of these cases after treatment.

RESULTS OBTAINED IN A STUDY OF SIXTY-TWO CASES OF DIABETES MELLITUS IN RELATION TO A POSSIBLE EXISTING SYPHILIS

Case No.	Sex	Age	Age When Diabetes Was First Discovered	Wassermann Test	Luetin Test	Constitutional Signs of Syphilis
1	Female	21	20	Negative	Negative	Absent
2	Female	46	44	Negative	Negative	Absent
3	Female	50	40	Negative	Negative	Absent
4	Female	26	23	Negative	Negative	Absent
5	Male	50	46	Negative	Negative	Absent
6	Male	44	44	Positive	Positive	Syphilitic myelitis
7	Female	56	53	Positive	Positive	Husband syphilitic
8	Female	60	52	Negative	Negative	Absent
9	Male	49	48	Negative	Negative	Absent
10	Female	60	57	Negative	Negative	Absent
11	Female	53	49	Negative	Negative	Absent
12	Male	50	45	Positive	Positive	Enlargement of liver and spleen
13	Male	49	48	Negative	Negative	Absent
14	Male	69	65	Negative	Negative	Absent
15	Male	48	44	Negative	Negative	Absent
16	Male	62	58	Positive	Positive	Aortic sclerosis
17	Female	45	43	Negative	Negative	Absent
18	Female	70	60	Negative	Negative	Absent
19	Male	45	45	Positive	Positive	History of chancre
20	Male	60	50	Negative	Negative	Wife (absent) diabetic
21	Female	38	38	Negative	Negative	Absent
22	Male	45	44	Negative	Negative	Absent
23	Female	46	43	Negative	Negative	Absent
24	Female	48	48	Negative	Negative	Absent
25	Male	58	44	Negative	Negative	Absent
26	Male	69	67	Negative	Negative	Absent
27	Female	58	54	Negative	Negative	Absent
28	Male	44	41	Negative	Negative	Absent
29	Female	48	46	Negative	Negative	Absent
30	Male	50	43	Negative	Negative	Absent
31	Male	54	52	Negative	Negative	Absent
32	Female	36	35	Negative	Negative	Absent
33	Male	43	40	Negative	Negative	Absent
34	Female	68	66	Negative	Negative	Absent
35	Male	41	39	Negative	Negative	Absent
36	Female	55	53	Negative	Negative	Absent
37	Female	43	41	Negative	Negative	Absent
38	Male	46	45	Negative	Negative	Absent
39	Male	42	41	Negative	Negative	Absent
40	Male	62	56	Negative	Negative	Absent
41	Female	55	52	Negative	Negative	Husband (absent) diabetic
42	Male	58	57	Negative	Negative	Absent
43	Female	25	22	Negative	Negative	Absent
44	Female	55	51	Negative	Negative	Absent
45	Male	45	44	Negative	Negative	Absent
46	Female	64	63	Negative	Negative	Absent
47	Male	60	54	Negative	Negative	Absent
48	Male	62	52	Negative	Negative	Absent
49	Female	59	56	Negative	Negative	Absent
50	Male	31	28	Negative	Negative	Absent
51	Female	47	46	Negative	Negative	Absent
52	Male	60	55	Negative	Negative	Absent
53	Male	55	53	Negative	Negative	Absent
54	Female	62	52	Negative	Negative	Absent
55	Male	33	31	Negative	Negative	Absent
56	Male	39	38	Negative	Negative	Absent
57	Male	52	44	Negative	Negative	Absent
58	Male	60	52	Negative	Negative	Absent
59	Male	51	49	Positive	Positive	Cardiosclerosis
60	Female	52	49	Negative	Negative	Absent
61	Male	54	44	Negative	Negative	Absent
62	Male	38	36	Positive	Positive	History of chancre

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[3] Von Noorden: Die Zuckerkrankheit, 1898, p. 160.

[4] Hirschfeld: Deutsch. med. Wchnschr., 1909, **35**, 137.

[5] Von Noorden: Die Zuckerkrankheit, 1912, p. 78.

[6] Sarra: Gazz. d. osp., 1909, **30**, 729.

[7] Scheinmann: Diabetes and Syphilis, Diss., Berlin, 1884. This contains references to the old literature.

[8] Neumann: Syphilis, Vienna, 1899, Ed. 2, p. 622.

[9] Ehrmann: Deutsch. med. Wchnschr., 1908, **34**, 1303.

[10] Lombroso: Ergebn. d. Physiol., 1910, **9**, 1.

[11] Ord: Brit. Med. Jour., 1889, **2**, 965.

[12] Feinberg: Berl. klin. Wchnschr., 1892, **39**, 119.

[13] Williamson: Diabetes Mellitus and Its Treatment, 1898, p. 113.

[14] Walker, I. C., and Haller, D. A.: Routine Wassermann Examinations of Four Thousand Hospital Patients, THE JOURNAL A. M. A., Feb. 12, 1916, p. 488.

On this account, it cannot be stated definitely that the diabetes was due to the syphilis. It is, however, logical to think that they exist as independent conditions, at least in the cases that are presented in this paper.

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A NOTE ON THE INTESTINAL ACTION OF ADSORPTIVE AGENTS *

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During recent years certain adsorbents, notably kaolin and fullers' earth, have come into use in the treatment of diarrhea. Kaolin (bolus alba) has been favorably recommended by the Austrian medical officers, who used it extensively in checking the diarrhea of cholera when that disease was prevalent early in the war.

Hess,[1] working with the diarrheal conditions of infants, advocates the use of fullers' earth rather than kaolin; the latter he found of no value. Fullers' earth checked the diarrhea, indeed caused constipation when continued for any length of time; it diminished the vomiting and seemed without harmful effects of any kind.

It is recognized that any therapeutic action of these substances will result from the physical property of adsorption, and Fantus[2] has suggested that they be standardized for use on such a basis. Fantus has studied particularly the value of fullers' earth as an adsorbent of various alkaloids, a phenomenon that may have considerable value in an antidotal capacity. The suspension of fullers' earth carries a positive electrical charge and is therefore most effective as an adsorbent of the negatively charged colloids and, selectively, of the lipoids, whence the derivation of the name. Kaolin, on the other hand, is practically amphoteric, possibly not an unimportant factor in the explanation of the weak activity developed as an adsorbing substance.

We can conceive the effect of such agents in the gastro-intestinal tract as influencing a variety of factors: Toxic substances may be adsorbed and thereby their systemic effect removed; ferment activity may be altered or, finally, the bacterial flora influenced. Apart from the work of Fantus, Friedberger and Kumagai[3] have published data indicating that such agents adsorb the larger molecular aggregates more readily than the lower split products of the proteins. An intoxication depending, therefore, on the absorption of the higher split products of proteins through a damaged bowel wall might conceivably be modified through the introduction of adsorptive agents. As the gastro-intestinal tract of infants is particularly susceptible to faulty absorption of such character, a large part of the therapeutic action may be developed along these lines by the administration of absorptive agents. Test tube experiments have shown that no marked influence is exerted on the growth of the ordinary bacterial flora of the intestine when such adsorptives are introduced. There remains, then, the possibility that the therapeutic effect may be due to an alteration in the ferment activity of the intestinal juices. In order to study this possibility the following experiments were made:

EXPERIMENTAL WORK

Human duodenal and upper jejunal contents were obtained from fresh postmortem material (supplied by Dr. E. R. LeCount). The intestinal contents were diluted with about three volumes of physiologic sodium chlorid solution and then filtered through several layers of gauze.

A. The influence on the rate of proteolysis of the intestinal contents when fullers' earth and kaolin were added is shown in Table 1.

TABLE 1.—RATE OF PROTEOLYSIS

Intestinal Contents C.c.	Noncolloidal Nitrogen Mg.
7.5	17.5
7.5	25.0 (48 hours digestion)
7.5 (with 0.2 gm. fullers' earth)	20.0 (48 hours digestion)
7.5 (with 0.2 gm. kaolin)	23.2 (48 hours digestion)

With fullers' earth the digestion was reduced to 33 per cent. and with the kaolin to 78 per cent. of the normal amount.

B. The diastatic activty was also decreased, as indicated in the following experiment: Five c.c. of intestinal contents were each mixed with 0.1 gm. of kaolin and of fullers' earth, incubated for thirty minutes, then centrifuged and the supernantant clear fluids titrated for diastatic activity. The portion treated with fullers' earth showed no diastase, while the diastatic activity of the kaolinized sample was reduced one half.

C. The lipolytic activity of the supernatant fluids gave the results shown in Table 2.

TABLE 2.—ACIDITY DEVELOPED FROM 1 C.C. ETHYL BUTYRATE

Intestinal Contents C.c.	Hundredth-Normal Sodium Hydroxid C.c.
1	15
1 (with kaolin)	9.3
1 (with fullers' earth)	1.5

RESULTS

As this well recognized effect on ferment activity represents the only demonstrable change induced by the adsorptive agents, we must consider its possible relation to the therapeutic results observed. Two possibilities present themselves:

It is probable that in diarrhea, with its rapid sweeping of the intestinal contents through to the lower levels of the intestinal tract, some of the partially hydrolyzed protein split products are absorbed in this more permeable portion, with resulting intoxication. An inhibition of proteolysis, induced by means of the adsorptive agents, might counteract this.

Considering that the bacterial flora of the intestinal tract depends primarily on the nature of the substrate offered the bacteria for growth, which in turn is dependent in a large measure on the ferment activity of the intestinal secretions, it is conceivable that these agents affect the bacterial content indirectly. The greater the degree of hydrolysis of the starches and proteins, other conditions being equal, the more favorable the medium for bacterial development. If, therefore, the intestinal digestion is retarded, the rapidity of bacterial growth and the actual intestinal level of maximum bacterial activity may be appreciably modified. As clinical experience has found these adsorbents to be of value chiefly in the bacillary diarrheas, the latter supposition seems most probable.

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[1] Hess, A. F.: Fullers' Earth in the Intestinal Disorders of Infants, The Journal A. M. A., Jan. 8, 1916, p. 106.

[2] Fantus, Bernard: Fullers' Earth: Its Adsorptive Power, and Its Antidotal Value for Alkaloids, The Journal A. M. A., May 29, 1915, p. 1838.

[3] Friedberger, E., and Kumagai, T.: Ztschr. f. Immunitätsforsch., orig., 1912, **13**, 127.

FOREIGN BODY (BONE FRAGMENTS) IN THE BRONCHUS

TWO CASES TREATED EXPECTANTLY

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The aspiration of a foreign body into the bronchus is by no means a rare occurrence. The two cases reported herewith could not be called extraordinary instances. But the value of the experience lay in the failure to give due credit to the suspicion that a foreign body in the bronchus might be responsible for the intense disease reaction which subsequently arose in the lung.

Each patient, an adult, inspired a piece of bone into a branch of the right bronchus. Secondary lung processes were well developed before the patients were seen at the sanatorium. They were both treated expectantly with varying diagnoses until the bone fragments were spontaneously expelled. Then, with rapid recovery taking place, the diagnoses for the first time became clear.

What might have been done is speculative; but a discussion of the possibilities, anticipating similar future experience, seems worth while because the expectant treatment as carried out in the two cases cited was far from satisfactory.

In earlier years the expectant treatment was practiced with the hope that the patient would bring up the foreign body by coughing. Kuhn[1] collected reports of 374 cases, and the hoped for result occurred in only eighty-three. Garrè[2] states that the expectant treatment, with luck, may bring about inflammatory softening in the vicinity and may make the foreign body mobile again so that later it will be expectorated; on the other hand, we shall by this means expose many patients to the danger of serious pulmonary lesions with their less favorable prognosis.

Pneumonotomy has a dark record in Tuffier's[3] eleven cases, resulting fatally in four, and successfully in two, and without the foreign body being found in five. Garrè[4] recommends this operation only if the foreign body has penetrated far into the periphery of the lung or when it is wedged into a branch of the third degree; and then it is indicated only when bronchoscopy promises no more hope of success, and furthermore only when the Roentgen ray accurately ascertains the position of the foreign body. Halstead[5] found that with the use of bronchoscopy the trachea and bronchial tree down to the third subdivision of the bronchus are as open to ocular inspection as is the interior of the nose through the nasal speculum.

Discussing Tuffier's figures, Killian[6] believed that the seriousness of these data called emphatically for furthering the Killian method of bronchoscopy.

Killian,[7] in 1907, reported thirty-one cases in which the foreign body consisted of a piece of bone and which was observed through the medium of bronchoscopy. He had six such cases himself, and in every case he was successful in removing the piece of bone. While it appeared important to remove the inspired bone fragment as soon as possible, he found that three quarters of his cases were old ones.

With the development of direct bronchoscopy it would now seem a serious fault to make merely the diagnosis of lung abscess, bronchiectasis, or lung gangrene when there is even the least suggestion in the patient's history of the aspiration of a foreign body. Lord[8] states that "foreign bodies should be suspected in all cases in which there is circumscribed bronchopneumonia, bronchiectasis, abscess or gangrene of uncertain origin, and especially when the right lower lobe is involved.[9] Of great importance in diagnosis is the use of the bronchoscope."

The lung disturbances in our two cases were located in the inferior lobes on the right side, the common side. Garrè[10] found that the right side was usually elected, in a ratio of 100:78, because of the shorter right bronchus with its steeper course and somewhat larger lumen. Foreign bodies are therefore more easily inhaled into the right bronchus.

REPORT OF CASES

Case 1.—J. A. S., man, aged 56, Nov. 29, 1911, was eating some pork, and was about to put his hand to his mouth to take out a piece of bone when he started to laugh. The piece of bone was inspired. He coughed hard for two hours. There was no pain or streaked sputum. Nothing much happened for the next two weeks except that he felt some shortness of breath on exertion. Then cough and expectoration began. He continued at his work, that of stationary engineer and fireman. About one month after the accident, expectoration increased in amount. The patient had to sleep in a chair in a semirecumbent position. He could lie only flat on the stomach, cough being persistent if he tried to lie on his back. There was irregular vesperal fever and malaise during January and February. He had poor appetite because on eating solid food he would cough and vomit. The weight declined from 145 to 127 pounds in four months; March 18, 1912, he was obliged to give up work on account of weakness. Cough would come on quite suddenly following slight exertion, and several times daily and nightly he would raise a quantity of thick, foul-smelling sputum. He complained of "heart weakness," and wanted to sit still, fearing the slightest move. The sputum was examined several times during March at the sanatorium and always was negative for tubercle bacilli.

On March 25, 1912, the patient raised about 1 teaspoonful of blood following a severe coughing fit. Soon afterward he coughed again, and the piece of bone landed on his tongue. On examination this fragment appeared to be roughly of cubical form. There was a small hooklike projection at one corner which, with handling, soon broke off. The composition was of spongy and cortical substance. The dimensions of the larger fragment were 15 by 10 by 11 mm. The detached smaller segment was about 3 by 1 mm.

For the next two or three days after expectorating this bone, the patient suffered considerable pain in the lung at a point about opposite the fifth rib just at the right of the sternum. It felt "like a boil coming to a head." The pain stopped on the third day when the patient suddenly expectorated several cupfuls of very foul, putrid, yellowish sputum.

After this event there was a rapid and steady improvement in the patient's condition. Cough and expectoration ceased. June 1, 1912, he was able to return to work. He regained all the weight lost before the end of the year. He has worked steadily up to this time, and is now in excellent condition, although he complained occasionally of "heart weakness."

A month or so after the trouble began, the patient sought medical advice. The common diagnosis appears to have been

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[1] Kuhn, cited by Latham and English: A System of Treatment, 1915, 3, 803.

[2] Garrè, Karl, and Quincke, Heinrich, Surgery of the Lung, 1913, p. 228.

[3] Tuffier, cited by Killian, Gustav: Ztschr. f. Ohrenh., 55, 334.

[4] Garrè and Quincke: Surgery of the Lung, p. 231.

[5] Halstead, Thomas H.: Tr. Am. Laryngol., Rhinol. and Otol. Soc., 1909, 15, 399.

[6] Killian: Ztschr. f. Ohrenh., 1908, 55, 334.

[7] Killian: The Treatment of Foreign Bodies in the Respiratory Tract and Esophagus, Tr. Am. Laryngol., Rhinol., and Otol. Soc., 1907, 13, 73.

[8] Lord, F. T.: Diseases of the Bronchi, Lungs, and Pleura, p. 34.

[9] Lord: Diseases of the Bronchi, Lungs and Pleura, p. 35.

[10] Garrè and Quincke: Surgery of the Lung, pp. 20-21.

"bronchitis." The patient was not satisfied with this opinion, since his cough "came on too quickly." He was examined five or six times by as many physicians. The latter evidently gave little credit to the patient's statement regarding the inspired piece of bone, and one told him that he would surely have coughed it up long before.

The patient was seen by a consultant at the sanatorium, March 30, 1912. The lung signs were those of lung abscess and associated bronchiectasis in the right lower lobes. The roentgenogram taken shortly afterward showed the abscess cavity in the right inferior lobe near the root of the lung with considerable surrounding infiltration.

Case 2.—S. C., woman, aged 37, married, admitted to the sanatorium, April 20, 1916, was eating, Nov. 30, 1915, when a piece of lamb bone slipped down her throat and was inspired when she started to talk. There was a history of immediate cough and shortness of breath. During the five months' interval there developed malaise, weakness, severe cough and expectoration, loss of appetite, and loss of weight to the extent of 15 pounds. Two small hemoptyses had occurred. In February, 1916, she gave birth to a child. On admission to the sanatorium, examination showed lung disturbance pretty well limited to the lower right lobes. The apexes were clear and also the entire left lung. The lower two thirds of the right thorax was practically immobile and was flat on percussion. The sharp demarcation at the third interspace front from good resonance to flatness was extraordinary. In the midback, bronchial breathing was heard with moist râles diminishing on cough, while the breath sounds were absent at the base. Fremitus was increased over this whole area.

There were vesperal fever and rapid pulse rate. The sputum, 8 ounces per twenty-four hours, was negative for tubercle bacili on admission, and in all subsequent examinations. Specimens were put through the shaking machine, antiformin preparations, and guinea-pigs. Urine examination revealed the presence of a chronic interstitial nephritis. Blood count revealed 22,000 white blood cells and 3,200,000 red blood cells.

This patient remained a bed case in the ward about all summer with fever, severe cough and expectoration. Pain in the right side of "a scalding nature" was complained of. Her indispositions showed acute exacerbations with high fever, attendant rapid pulse rate and prostration. A feeling of suffocation was prominent. Fluid or pus being suspected at the base of the right lung, an attempted paracentesis was carried out with negative result.

Sept. 6, 1916, not quite ten months after the aspiration of the foreign body, the patient coughed up two pieces of bone. The larger fragment was of rough triangular form and measured 19 by 7 by 8 mm. Two of the angles were blunt, and the smaller fragment fitted approximately to one of these. The third angle was sharp. There appeared to be no recent cleavages other than the one to which the smaller fragment fitted. In composition the bone was cortical and spongy. The smaller fragment was only a spicule about 1 by 3 mm. in dimensions. Soon after the patient had brought up this bone her symptoms began to clear up. Oct. 14, 1916 she was discharged from the sanatorium against advice. She has since continued to improve in spite of the poor home surroundings into which she went.

COMMENT

Killian[11] states that cubical bodies are more difficult to remove. Bruenings devised a sharp hook forceps for this purpose. The pieces as a rule[7] are flat in shape, 14 by 15 mm. long and 8 by 9 mm. wide, lying with their long diameter corresponding to the axis of the bronchus.

In Case 2, roentgenoscopy was not performed. It is perhaps needless to state that had there been opportunity for a roentgenogram at the time of the patient's admission to the sanatorium, much valuable information would have been gained and there would have been less need of guesswork.

It is admitted[8] that the Roentgen ray is less valuable for the actual demonstration of bone and ivory substance than for metallic foreign bodies in the bronchi, a positive result being obtained among forty of the former sort in only four.

Garrè[12] states that while there is a shadow cast by the aspirated piece of bone, it is generally not sufficiently large or intense to differentiate from other parts of the skeleton. After a while the surrounding infiltration and the formation of cicatrices or abscesses will give the necessary information.

Killian[13] concluded that without bronchoscopy the presence and nature of the foreign body could not always be ascertained. The illness was often considered only an obstinate case of bronchitis. In many a slowly developed suppuration of the lung of uncertain origin finally a foreign body is discovered.

In America the use of the bronchoscope has been successful in the extraction of foreign bodies from the bronchi.[14] Yankauer[15] was obliged to have three roentgenograms taken before finding an indistinct shadow in the region of the left bronchus, attributable to an inspired prune stone which was extracted by the use of the bronchoscope.

Chevalier Jackson[16] states that the bronchoscopic removal of foreign bodes from the bronchi bloodlessly through the mouth has 96 per cent. successful results. Of 482 cases of aspirated foreign bodies, only four were recorded in which an upper lobe bronchus was invaded. Jackson's case was one of these four.

The contraindications are few,[17] namely, aortic aneurysm and severe cardiac decompensation.

The published descriptions of this good work, and especially of Killian's six cases,[7] in each of which a piece of bone was observed and eventually removed by bronchoscopy, furnish marvelous examples of the cleverest technic. The comparison between this method of treatment and the expectant treatment as experienced in our two cases has seemed to be worthy of general attention.

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[11] Killian: The Treatment of Foreign Bodies in the Respiratory Tract and Esophagus, Tr. Am. Laryngol., Rhinol. and Otol. Soc., 1907, **13,** 74.

[12] Garrè and Quincke: Surgery of the Lung, p. 218.

[13] Killian: Ztschr. f. Ohrenh., **55,** 115-116.

[14] Jackson, Chevalier: The Dilatation of Bronchial Strictures, The Journal, A. M. A., Sept. 21, 1912, p. 1123.

[15] Yankauer: Tr. Am. Laryngol., Rhinol. and Otol. Soc., 1911, **17,** 308.

[16] Jackson, Chevalier: Tr. Am. Laryngol., Rhinol. and Otol. Soc., 1915, **21,** 241.

[17] Lord: Diseases of the Bronchi, Lungs and Pleura, p. 37.

A Night and Day Camp.—The St. Louis Tuberculosis Society, according to the *Journal of the Outdoor Life* (April, 1917), has established what is called a Night and Day Camp, said to be the only preventorium for adults in the United States, and one of the few in the world. It is designed as a home for self-supporting girls over 14 years of age who have to stop work because of ill health. No cases of tuberculosis are admitted, but it is a place where girls who are threatened with tuberculosis may go for convalescence from an attack of some disease, or where one who is worn out and nervous may rest and recuperate. The features of the institution are rest, outdoor life and good food. There are no charges, the camp being supported by the tuberculosis society, from the sale of Red Cross seals and otherwise. Since February, 1913, when the camp was started, it has taken care of 182 girls, of whom 160 have been discharged. The average stay at the camp has been three months and twenty-eight days, the average gain in weight of the girls has been 11 pounds and 14 ounces, and the average cost per day per patient has been 74 cents.

TRAUMATIC ASPHYXIA

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Traumatic asphyxia (pressure stasis, ecchymotic mask) is a condition of sufficient rarity to justify reporting the following case:

REPORT OF CASE

W. L., man, aged 35, bridge builder, was injured, Oct. 21, 1916, while helping to make the connection between the top chords of a new truss which were being placed in final position. He was squeezed between the ends of the chords, which doubled him up and brought his head down on his knees. It was estimated by the patient that the weight of the end which came down on him was at least 7 tons. No accurate statement of the time this chord was pressing on him could be obtained. When I first saw him, within an hour from the time of the injury, he presented marked ecchymosis and swelling over the head and forehead and down to the malar bones. This area was dark purple and clearly delineated by an abrupt margin where the healthy color of the skin joined the swollen discolored part. Pressure did not affect the discoloration. There was a subconjunctival hemorrhage on each side which was bright red, contrasting strongly with the purplish discoloration of the adjacent tissues—a striking appearance. Rupture of each ear drum with hemorrhage from the ear canal was noted. Bleeding also occurred from the nose. There were a bruise of the right shoulder, slight bruises over the chest and abdomen of insignificant extent, and a fracture of the seventh rib on the right side. There was slight boss of the spine in the lower dorsal region, which was probably occupational, although the possibility of its having resulted from the injury was considered. There were no other evidences of spinal injury to confirm such a diagnosis. The patient was fully conscious and the reflexes were normal, with no evidence of cerebral injury. The pupils were equal and responsive to light and accommodation.

The diagnosis of traumatic asphyxia was confirmed by the subsequent history of the case. The discoloration of the skin cleared up promptly in three or four days, that under the conjunctivae persisting much longer. The patient recovered without untoward incident, leaving the hospital, November 8.

COMMENT

The pathology of these cases varies only in extent and degree, and depends largely on the amount of compression and the length of time it continues. It consists in discoloration of the skin from venous distention or hemorrhage in varying degree; subconjunctival hemorrhage, rupture of the eardrum with hemorrhage from the canal, epistaxis, and swelling of the skin. The latter and the discoloration also are limited to places which are not subjected to supporting pressure, and usually extend no lower than the clavicle, although in rare instances there is some discoloration in the axilla. Discoloration in the soft tissues disappears in the course of a few days; that of the conjunctivae at times persists for several weeks. Coincident injuries, of course, make the other pathologic changes different in each case.

The prognosis is usually favorable, recovery taking place in most cases quite promptly. It will depend, of course, to a large degree on the amount of pressure and the length of time which it is applied, as well as the gravity of coincident injuries. From the nature of the injury and its manner of occurrence, surgical aid can rarely be had immediately; when possible, however, the immediate use of artificial respiration and oxygen should be employed. Usually shock is slight, except when the accompanying injuries are severe. The subsequent treatment should consist in combating shock if it is present, keeping the patient at rest, and meeting indications as they arise.

Fourth and Chestnut Streets.

HERNIA OF THE BLADDER

REPORT OF A CASE OF STRANGULATED RIGHT FEMORAL INTRAPERITONEAL CYSTOCELE ASSOCIATED WITH AN ENTEROCELE *

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The large majority of bladder hernias are of the paraperitoneal variety. The relative proportion of the intraperitoneal and extraperitoneal varieties is difficult to estimate, as the different statistics undoubtedly show great variations. It is uncommon to diagnose bladder hernia before operation, and even at operation the condition is often not recognized until the bladder is injured. Such injury must be looked on as serious.

REPORT OF CASE

History.—R. L. T., woman, aged 54, white, housewife, married, entered the hospital, March 6, 1916, at 2 a. m., complaining of strangulated right femoral hernia. She had had eleven children, the oldest 30 and the youngest 7 years of age; all labors were normal. She had suffered from constipation for many years. Four years before she had noticed a lump in the right groin. It was not painful, felt soft and was about the size of an English walnut. When first noticed, the lump could be easily pushed back. She paid no attention to it. Six months before admission, the lump had increased in size, and felt tender, especially after physical exertion; but she was always able to reduce it after lying on her back. She had no urinary disturbances at any time.

When admitted to the hospital the patient was under the influence of morphin, and not in the mental state to render a recital of her history. The following was obtained from her husband and her physician: March 3, the patient had no bowel movement; March 4, she complained of abdominal pain, felt ill, and vomited whatever she swallowed; March 5, she took a dose of magnesium sulphate but threw it up and with it a large amount of bile; the colicky pains continued; the constipation remained and the lump in the groin was so tender as not to allow her clothes to touch it. The following day, she showed the following general symptoms of strangulation: anxious expression; sallow features; absolute constipation; vomiting; colicky pains; tympanitis; abdominal tenderness; moderate shock, and exhausted vitality. The voided urine was scanty and highly colored and was reasonably attributed to the intestinal obstruction. Hot applications and taxis failed to relieve the strangulation.

The patient's temperature on admission was 97, the pulse rapid and feeble, and the blood pressure 120. Examination revealed a lump situated under the right Poupart's ligament and below and to the outside of the spine of the right pubis. It was globular and about the size of a small hen's egg. It was hard, tense, tender, dull, completely irreducible, and the expansile impulse absent. The abdomen was tender, distended and tympanitic. No cystoscopic examination was made, as bladder symptoms were wanting. There was no strangury or hiccup. On catheterization 4 ounces of highly colored urine were drawn.

Operation.—I made an oblique incision 2½ inches long through the skin, beginning 1 inch above Poupart's ligament and extending over the inner and lower end of the hernial swelling, and unexpectedly exposed the hernial sac. Despite a careful search, I failed to find the usual coverings of the hernial sac—the cribriform fascia, the femoral sheath, and the septum crurale. Two points aided me in recognizing the exposed structure to be the sac: first, on drawing it gently down I could trace its neck into the abdominal cavity; second, I was able to insinuate cautiously the point of a director along it into the peritoneal cavity. The sac was rounded and dull, so dense that its contents could not be seen through it, and so tense that it could not be made to glide over its contents. No mass of extraperitoneal fat was present in the upper or inner portion of the sac. When the sac was pinched up and nicked, clear amber colored fluid escaped and was mopped away. When this nick in the sac was enlarged, an escape of clear straw colored fluid took place. This made me suspect that I had encountered a rare variety of femoral hernia in which two sacs had developed or a dividing sac was present. On further examination, however, the escaped fluid proved to be urine, and the edges of the wound revealed that the bladder was present in the sac and partially adherent to it. Its wall was accidentally wounded by curling over the edge of the director when the nick in the sac was enlarged. I swabbed the wound with sterile gauze soaked in ether and closed the wound of the bladder by a double layer of catgut sutures after freeing it from its adhesion to the sac.

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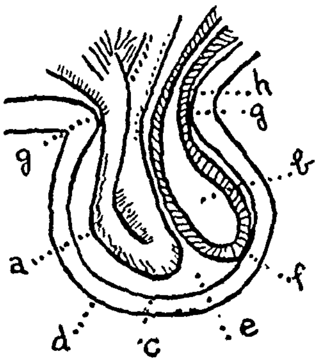
* Abridged from a paper read before the Pasquotank-Camden-Dare County Medical Society, N. C., Nov. 1, 1916.

The presenting intestine had the form of a small, tense knuckle. It was smooth, moderately shiny, deeply red, spotted with slightly purplish patches, and its vessels could be emptied by pressure.



Diagrammatic drawing of hernia; *a*, intestine; *b*, bladder; *c*, sac; *d*, skin; *e*, serous exudate; *f*, point at which the bladder was adherent to the sac and was wounded in the first place; *g*, the strangulating agent, a thickening of the mouth of the sac; *h*, point at which the bladder was wounded in the second place.

The division of Hey's ligament and the bands of fibers which form part of the deep crural arch did not render the hernia reducible. The strangulating agent was the mouth of the sac, itself, which was found to be greatly thickened. In dividing this thickening I accidentally again wounded the bladder, and had to suture it after cleansing the wound with ether.

In the treatment of the sac and the closure of the crural canal I followed Bassini's method.

There is no sign of relapse of the hernia.

COMMENT

This case is of interest because of:

1. The rarity of cases of femoral intraperitoneal cystocele.
2. The difficulties in recognizing the hernial sac, owing to the absence of its usual coverings.
3. The strangulating agent, which was a thickening of the mouth of the sac itself — a very rare seat of strangulation in femoral hernia.
4. The accidental wounding of the bladder in two places.
5. The reliance on ether as a valuable antiseptic, making the introduction of a drainage tube in the hernial wound unnecessary.

Cancer of the Mamma in a Man.—A. H. Roffo describes in the *Prensa Medica Argentina,* 1916, **3,** 81, the third case of this kind that has been published in Argentina. The man was a painter, a hard drinker, and eleven years before there had been intense pain around the left nipple, with much swelling and tenderness. These symptoms subsided under fomentations but returned at the same spot after an interval of eight years, much more intense, and an incision released pus. A hard tumor developed and ulcerated and in the course of three years showed malignant characteristics, with metastases in the liver. Eighteen illustrations show the microscopic and four the macroscopic findings in the case.

RADIUM THERAPY IN CANCER*

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The various steps in our knowledge of the physical and chemical properties of radium which have led to its use in the treatment of cancer, and the successive improvements in its mode of application are of much interest; but since they are not essential to the present purpose, detailed reference to them may be omitted. For the therapeutist the most important question concerning radium today is not how many cases of cancer this agent has cured, but whether it has in any sense a specific action on tumor tissue.

On cellular tumor tissue the action of radium is selective and specific, in the sense that tumor tissues are from four to seven times as sensitive as most normal tissues. Without notable inflammation of the skin, without extensive necrosis of tumor tissue, and without destruction of the normal elements involved, tumor cells may be made to disappear, and the tissue returns to its normal state. This view, first stated by Wickham in 1908, has been supported by many later observations, which have also shown that the result depends partly on the nature and condition of the tumor, but chiefly on the dosage of radium.

The morphology of the changes in tumor tissue following successful radium application is also specific. At least I have not seen such series of changes taken as a whole under any other circumstances; and when they are present in undisturbed course, it is possible to recognize a tumor tissue which has been treated by radium.

CHANGES FOLLOWING APPLICATION OF RADIUM

From material gathered in a series of uterine cases at different intervals, including two in which the organ was removed some weeks after treatment, the following changes leading to the disappearance of epidermoid carcinoma of the cervix may be traced: Within from three to five days after the application in the cervical canal of 300 mc. of radium emanation in a platinum tube, there is hyperemia of the tissues, beginning exudation of lymphocytes and polymorphonuclear leukocytes, and swelling of all the cells. In the second week the cords of tumor cells present a characteristic appearance. The nuclei are swollen, homogeneous, and hyperchromatic. The cell bodies are enlarged, the cells loosened, hydropic vacuoles appear in the cytoplasm, and fusion giant cells form. In the third week the number of cells is greatly reduced. Many appear to suffer liquefaction necrosis. Others are invaded and mechanically broken up or compressed by lymphocytes and proliferating stroma. From the fourth to the fifth weeks only pyknotic nuclear fragments or an occasional giant cell are visible, or no traces whatever remain. Meantime the stroma has been active and appears to take an important part in the process. Leukocytes become overabundant, the capillaries proliferate actively, and the stroma is transformed into granulation tissue in which numerous new capillaries penetrate and excavate the tumor cell nests. The gathering of leukocytes, lymphocytes, plasma cells and polyblasts in the later stages of radium reaction may be extremly profuse, and in this respect the reaction is somewhat specific. Eventually the site of the tumor is occupied by granulation tissue from which slight serous and cellular exudate is discharged. Later, epithelium grows over the denuded surface, completing the repair. All manner of variations occur in the reaction of tumor tissue to radium. Complete simple necrosis follows overaction of radium. Bulky tumors may present large areas of simple necrosis in which cysts form by liquefaction. The stroma as well as the tumor may be destroyed, in which event extensive scarring will result. In the foregoing scheme of changes it would appear that just enough radium had been employed to cause slow degeneration of tumor cells and stimulate regenerative growth of granulation tissue.

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* Read before the American Association for the Advancement of Science, Section on Physiology and Experimental Medicine, Dec. 29, 1916.

It is important to note that the best effects of radium do not consist merely in the killing of cancer cells, but that it may excite a slow and complex process in which stimulation of capillaries and fibroblasts and exudation of lymphocytes are prominent and even essential factors in the healing process, while the tumor cells may be slow to yield their places. Some of the most surprising and satisfactory results follow a single application of radium, although the patient may show little improvement for weeks or months. On the other hand, if repeated strong applications have destroyed the blood vessels and converted the base of the lesion into dense cicatricial tissue into which capillaries and leukocytes cannot penetrate, groups of tumor cells may resist the direct action of radium and become the source of recurrence. Under some circumstances it appears that the reaction of the normal tissues is a more essential curative factor than the direct action of the rays on tumor cells.

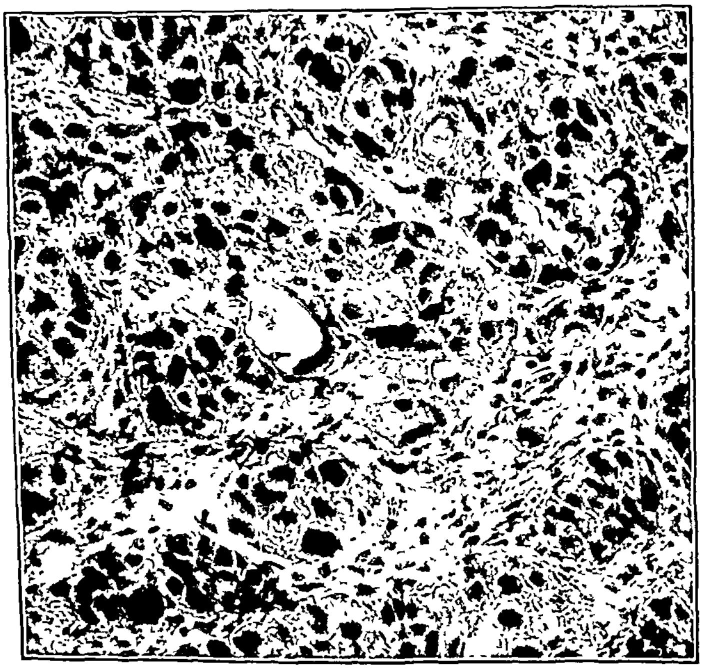

Fig. 1.—Cellular changes following radium. structure of epidermoid carcinoma of cervix uteri ten days after treatment; the changes consist chiefly in swelling and hyperchromatism of nuclei.

Another interesting feature of the healing process is the absence of scarring when the dosage is exactly adjusted. It is a rule that a tissue infiltrated by carcinoma cells is condemned to permanent damage from the desmoplastic property of the carcinomatous process. The smooth, supple tissues remaining in many healed cases present an exception to this rule and offer further evidence of the specific nature of the action of radium. It is of theoretical and practical interest also that bulky cellular tumors, as the abdominal metastases of carcinoma of the testis, may rapidly melt away in a few days without producing any sign of intoxication from the absorption of large quantities of tumor proteins.

The action of gamma rays obtained from heavily screened radium resembles a mild and prolonged beta ray effect, and depends of course on the intensity and duration of the exposure. The latent period may extend over from seven to ten days, the hyperemia increases slowly, degeneration of cells is gradual, the exudate is slight, necrosis of normal tissues is often avoided, and regeneration is prolonged often over several months. Numerous observations show much variation in the behavior of different tissues, lymphoid, and other cellular structures being most susceptible. The lymphocyte, the young fibroblast, capillary endothelium, and multiplying cells are the ones regularly attacked by heavy dosage.

Of the mode of action of radium, little is definitely known. It is a reasonable assumption that the gamma rays absorbed while traversing the tissues give rise to secondary beta rays, electrons, which act on the cells. That the action is electrical, accelerating cell ferments, ionizing gases, altering lipoid emulsions, etc., may be further conceived, but is not demonstrated. These questions may well serve to stimulate and aid in the study of the physics, chemistry and finer morphology of the cell.

Interpreted from the pathologic standpoint, the observed changes in cell morphology indicate an action directly on the tumor cell, and especially on its nuclear mechanism, with profound and progressive chemical changes in the nuclear proteins, attended by the formation of acid products and by the absorption of material, probably water. The appearance of the cell cytoplasm suggests hydrolytic cleavage of cell proteins, and these seem to excite leukocytic emigration. The growth of capillaries may be explained as a regenerative process following a loss of tissue equilibrium, or it may involve a direct stimulating action of the radium on endothelium and fibroblasts. In any event the process is very complex, and in many cases there are strong hints at a restoration of normal resistance of the connective tissue against lawlessly proliferating tumor cells. Several observers have noted that in the slow healing of epidermoid carcinoma there is a phase in which the malignant tumor approaches the architecture of a benign papilloma.

Lazarus-Barlow considers that the absorption of tumor cells affected by radium may establish a true immunity against their growth. The most pronounced traces of artificial immunity produced against tumors have followed the absorption of living tumor cells in the body. Radium induces such an absorption of living tumor cells.

Turning now to the practical aspects of our subject, it is necessary to ask what the advent of this highly remarkable physical agent has accomplished in the treatment of cancer, what the limitations of its use are, and what its future development seems likely to be. For as scientists we are not permitted to rest in the pursuit of the highly interesting theoretical problems which radium thrusts on our notice, but some of us, especially medical men, must endeavor to enlarge the theoretical knowledge and apply it effectively to human needs. The great practical value of radium therapy, especially in cancer, has undoubtedly been the impetus for the study of the action of radium on animal tissues, and it should lend a peculiar zest to the much needed solution of many purely scientific problems in radium physics.

A glance at the position of research in the treatment of cancer by radium reveals that this study is pursued under peculiar difficulties which are wholly unknown in the scientific laboratory. While in some quarters unwarranted hopes have possibly been aroused by the initial results of radium treatment, I am able to find in recent accredited medical literature no exaggerated statements of its value. On the other hand, the public has repeatedly been warned against radium in the treatment of cancer, with serious damage to patients undergoing such treatment, and to others who might benefit from it. These warnings have regularly come from persons who have had little experience in the use of radium. To inform the public that radium has failed in the treatment of cancer is to misstate the facts, and entails a direct and serious responsibility. It is not too much to ask that the merits and demerits of radium be worked out within the medical profession, and that statements likely to reach the public should be carefully censored.

It is now some years since the value of radium in cancer was so fully demonstrated that, with the approval of leading physicians, numerous European cities began to devote public funds to provide their municipal hospitals with a working supply of this precious metal. Unless they have made a grave blunder, the American profession is behindhand in recognizing the actual position of radium, for which the American public will suffer.

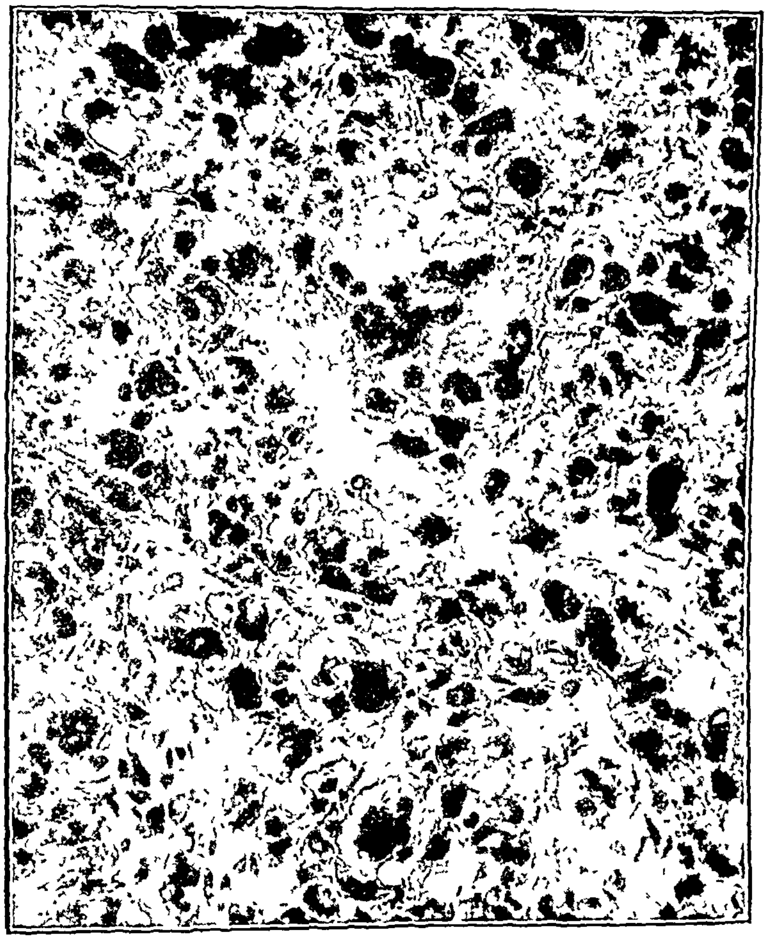

Fig 2—Cervical acanthoma two weeks after treatment, showing swelling and hyperchromatism of nuclei, with hydropic degeneration and fusion of cell bodies

The condition laid down by surgical opinion that radium must be tried out on inoperable cancer has generally been accepted, and on the whole is a wise restriction, especially for those beginning the use of this agent. With advanced and inoperable cancer of many varieties radium has more than justified the hopes aroused by its success with cutaneous tumors. Few clinics with sufficient radium and adequate experience have failed to secure some complete clinical regressions in apparently hopeless cases. Some surgeons who have witnessed the results obtained in advanced carcinoma of uterus, lip, tongue, rectum and prostate have determined to reduce the scope of operability in these fields and trust to radium as preferable to a mutilating and hazardous operation. Yet most workers with radium are not oversanguine of the capacity of radium to benefit permanently very advanced cancer. The effects of radium are confined to a limited territory; it cannot be expected to influence widely extended disease, and it has no effect on disseminated tumors. Moreover, the attempt to control a large territory leads to the use of excessive dosage, which may cause severe painful destruction of tissue, so that unfortunate results have sometimes followed the effort to deal with really hopeless cases. It is highly important that the limitations of radium in this group of cases should be recognized, that its failures in this field should not prejudice its claims elsewhere, and that only palliative efforts should be attempted when there is no possibility of reaching all the invaded tissues.

From the reports of cases now available in the literature, many of which I have seen duplicated at the Memorial Hospital, I am led to believe that the following indications for the use of radium in inoperable cancer may safely be stated when considerable quantities of the agent are available in the hands of an experienced operator:

Radium should not be withheld from rapidly growing deep seated and bulky tumors, for the cellular structure of many such tumors is just that most susceptible to the action of large amounts of radium applied at a distance from the skin and over long periods.

In those forms of cancer in which operation yields particularly unsatisfactory results, as in uterus (cervix), prostate, tongue, pharynx, antrum, and in lymphosarcoma, the scope of operability should be reduced and radium treatment preferred or employed in combination with a limited operation.

Cautious palliative treatment only is usually the safest limit in efforts to deal with very advanced cases of any type.

The untoward effects of overtreatment of inoperable cases may greatly aggravate the patient's sufferings, adding to the original condition severe and prolonged pain, sloughing of tissues, perforation of hollow organs, hemorrhage, infection and general intoxication. It is from such ill advised efforts that much of the current distrust of radium has arisen, and not from its proper use in suitable conditions. The combination of radium and surgery has been employed in many clinics with encouraging results in borderline or inoperable cases, and offers an important field of research for the progressive surgeon.

THE TREATMENT OF OPERABLE CANCER BY RADIUM

Since radium has accomplished a clinical cure in certain advanced cases of cancer, why should it not be employed in operable conditions? The objections to this policy must be frankly stated and clearly recognized. They are, mainly, that all new methods of cancer therapy have inevitably failed, and only the knife has proved reliable; that certain so-called clinically cured cases have relapsed within a few months, and that it is morally unjustifiable to sacrifice the patient's chance from operation for an experiment by any new method.

The validity of these objections depends today entirely on the extent to which the ability of radium completely to destroy localized cancer has been demonstrated.

The capacity of radium to eradicate cutaneous carcinoma was early demonstrated and is now a routine experience in all large radium clinics, so that in many circles radium is the method of choice in dealing with rodent ulcer and epidermoid carcinoma of the skin. In certain derivatives of basal cell carcinoma, as the mixed tumor of the salivary glands, radium has had notable success. and should usually be employed in preference to operation. Yet there are many conditions in which cutaneous carcinoma may prove refractory. Among these may be mentioned recurrences after operation, carcinoma following lupus, invasion of bone, location near eye or nasal sinuses, or in thin skin over bony prominences, and after repeated ineffectual exposures.

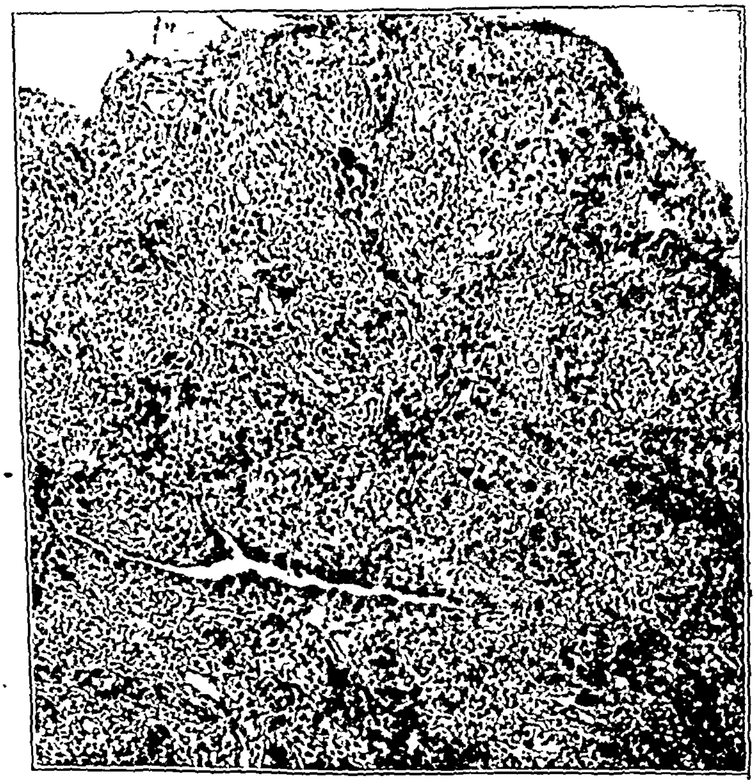

Fig. 3.—Cervical acanthoma three weeks after treatment, showing excavation of degenerating tumor cell masses by cellular granulation tissue.

In carcinoma of the cervix uteri the results of radium treatment have impressed several well known and conservative gynecologists as highly favorable, and some say they are more favorable in borderline cases than the results of operation (Döderlein,[1] Bumm, Kronig and Gauss,[2] Schauta,[3] Chéron and Rubens-Duval,[4] Doppert,[5] Rupp,[6] Clark,[7] Miller,[8] and Kelly and Burnam[9]). Although the opportunity for such a demonstration is rare, it has been shown that radium is capable of destroying all traces of fully established or advanced cervical carcinoma. Schauta[3] showed it in eight badly overtreated cases. Chéron and Rubens-Duval[4] and Schmitz[10] each report one case fully studied microscopically one or two years after treatment in which no trace of carcinoma could be found in the pelvis. I can report two cases in which the uterus removed four and six weeks after treatment of well established carcinoma showed no traces of tumor cells in serial sections of the uterus. More conclusive still is the steadily increasing number of complete local regressions of advanced uterine cancer now being reported from many clinics. Since one of the chief advantages of radium therapy is avoidance of mechanical dislocation of tumor cells, the use of various adjuvants to radiotherapy, as preliminary cauterization, ligation of vessels, curettage, and subsequent extirpation of the uterus, seem to me wholly unnecessary or distinctly contraindicated. Rarely it may be wise to extirpate slumbering tumor cells from the outskirts of regressing cancer, but radium-treated tissues are unfavorable for surgery, and postoperative recurrences give poor results with radium. Yet this is a matter to be determined by clinical experience.

Chéron and Rubens-Duval[4] report 158 cases of uterine cancer, mostly inoperable, treated by massive doses of radium, with 93 marked regressions. Among these were 77 complete regressions, of which 22 have remained complete for from one to four years; 15 more date from less than one year, while 9 patients disappeared when well. There were 31 local recurrences, chiefly among those first treated, while 12 became operable and operations were performed, with results not stated.

Döderlein[1] reports on 153 cases, mostly inoperable and recurrent, of which 31 patients he regards as clinically well one year or more after cessation of treatment; 19 of these 31 were operable cases, and 12 were wholly inoperable. He used a maximum of 300 mg. of radium for twenty-four hour periods repeated once or twice at intervals of two weeks. He states that if these results prove permanent, operation on uterine cancer has played its main rôle.

Kelly and Burnam[9] report that of 327 inoperable uterine cases 20 per cent. gave complete clinical regressions, but the *period* of observation of many of these the way of the normal and legitimate extension of the radium treatment of cancer.

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[1] Döderlein: Zentralbl. f. Gynäk., 1915, p. 185.

[2] Kronig and Gauss: Deutsch. med. Wchnschr., 1914, pp. 740, 893. Gauss: Strahlentherapie, 1915, p. 379.

[3] Schauta: Zentralbl. f. Gynäk., 1914, p. 961.

[4] Chéron and Rubens-Duval: Strahlentherapie, 1915, p. 80.

[5] Doppert: Zentralbl. f. Gynäk., 1914, p. 975.

[6] Rupp: Deutsch. med. Wchnschr., 1914, p. 51.

[7] Clark: Ann. Surg., **64**, 682.

[8] Miller: Surg., Gynec. and Obst., **22**, 437.

[9] Kelly and Burnam: Tr. Am. Gynec. Soc., 1916.

[10] Schmitz: Med. Rec., New York, 1916, **90**, 100.

THE PROBABLE FUTURE OF RADIUM THERAPY IN CANCER

The progress of radium therapy in cancer has been so rapid, many of its results so paradoxical, and the time test of their permanency so important, that it is difficult to conceive just what position this method will eventually occupy. The possession of an agent which brings about the destruction of tumor cells without seriously injuring the contiguous normal tissue is a matter of great biologic interest, probably the most important single contribution of modern cancer research.

Radium, however, is only a locally acting agent, and it is difficult to see how it can be made to exert a universal action over the body or to affect the constitutional element in cancer. It is not, therefore, the ideal cancer cure which some have conceived and many demand before they will pay attention to new treatments for cancer.

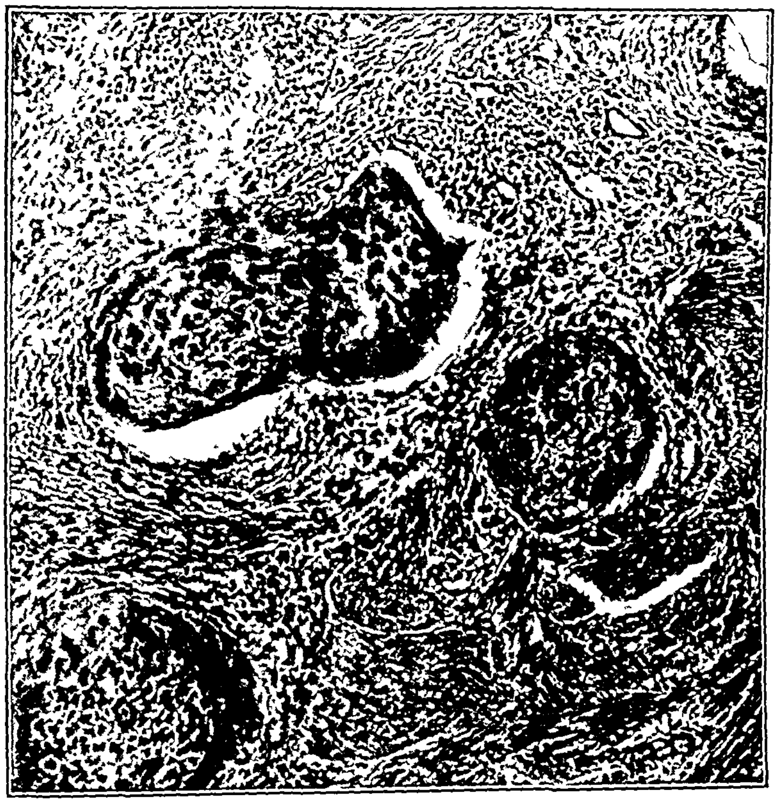

Fig. 9—Persistence of groups of tumor cells incarcerated in fibrosing lymphatics of parametrium in epidermoid carcinoma of cervix, after radium treatment.

The intravascular injection of radium deposit in salt solution is said to have favorably influenced lymphosarcoma, but there are no indications that a safe dosage in the blood can affect the more resistant types of disseminated tumor cells. There are, however, definite grounds for assuming, as well as some clinical proofs, that by increasing the quantity, the length of exposure, and the distance from the skin, many deep and locally extensive tumors may be inhibited and some may possibly be destroyed. Since bone absorbs but little of the gamma rays, a location within the chest, skull or bone marrow is no bar to this action, although carcinoma invading bone usually resists radium. A similar method of treatment of large superficial tumors completely eliminates the caustic action of radium and may prove sufficiently active to control the growth. Deep cancerous lymph nodes have already been strongly affected in this way, and certain large cellular pelvic and abdominal tumors have been found to yield promptly and, it would seem, completely, to the action of large amounts of radium at a distance. By such applications it appears not unlikely that the field of radium may be extended to certain tumors of the fasciae, muscles, bones, stomach and breast.

A constantly recurring question will be the propriety of employing radium in operable malignant tumors. ing long since demonstrated its capacity to con- erficial cutaneous tumors, having justified its alliative in advanced cancer and produced a considerable list of clinical or anatomic cures in cancer of uterus, rectum and lip, it would seem that radium deserves a trial in all accessible and strictly localized carcinomas. In this field it will be well to limit the trial to cases in which there is some contraindication to operation. In regions like the tongue and buccal or pharyngeal mucosa, where operation is mutilating and highly unsatisfactory, radium certainly deserves a *careful trial in* experienced hands. It must, I think, be frankly admitted from the demonstrable action of radium that as a rule the same conditions that are favorable for operation are also favorable for radium, and the sooner the comparative test of the merits of the two methods is made, the better it will be for medicine and for humanity. It is my opinion that the future position of radium is not to be merely as a palliative in advanced or recurrent cancer, in which capacity it is of great value, or as an adjuvant to surgery with which it may be used to advantage, but as an agent for dealing with certain forms of early and strictly operable cancer in which for particular reasons it may be found on the whole more satisfactory than surgery. One such field, the uterus, seems already to be defining itself. In stating this general opinion, I wish to emphasize that it is in the nature of a prediction for the future and not an estimate of the present position of radium. A direct inference encourages this belief. Early cancer is a localized disease and radium is a locally acting agent with a specific action on tumor cells.

It has been the experience of many workers with radium that they have first employed it in *inoperable* cases, *then they have* reduced the scope of operability, next they included operable cases in which there was some contraindication to operation, and finally, as their success grew and their skill and confidence increased, they have treated strictly operable tumors. Is, or is not, this a legitimate course to pursue?

In an important economic aspect radium offers a subtle advantage over the knife, which is the mental attitude of the cancer victim toward the treatment of his disease.

In 1805, Young of London wrote: "So long as the extripation of scirrhus of the breast is performed by the knife, so long shall we have the disease fostered in secret. For the operator may argue until doomsday ere he shall persuade his patient that cutting the breast with a knife is a mere nothing." Although this statement comes from the days before anesthesia and when nearly all patients died of recurrence, it is probable that the fear of an operation still induces many oversensitive persons to hide the early signs of cancer until the disease is too far advanced for any hopeful treatment. If then, a simple application of radium can, in a certain proportion of cases, replace operation, and physicians can safely so inform their patients, there is little doubt that many more early lesions will be brought to light. Against the wisdom of such a radical step stands the obvious danger that any relaxation in the rule of early operation might be abused. I am far from recommending such a step at the present moment, but I believe that this consideration is one which we cannot afford to ignore in estimating the value of radium therapy.

Almost equally important as a cause of failure in the cure of cancer is the hesitation and delay practiced by many physicians in dealing with early lesions of doubtful nature. It is just in this field of precancerous lesions, hypertrophies, atypical inflammatory overgrowths, warts and polyps of mucocutaneous junctions, numerous leukoplakias, cervical erosions, nevi, and many accessible benign tumors, that radium is both efficient and comparatively free from danger. There need be no hesitation in recommending the employment of this agent by experts in such conditions. To what extent radium may establish itself in the treatment of operable cancer it remains for the future to decide. Radium therapy is in its early stage of evolution. During this evolution those who know what radium can do, who have a background of knowledge of what other methods can accomplish, and who are ready to enlarge or alter those methods if necessary, may safely be trusted to tell us when and how radium is to be used in cancer.[29]

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[29] In addition to the references already given, the following will be found of interest:
Hardy: Jour. Physiol., 1903, p. 29.
Löwenthal and Edelstein: Biochem. Ztschr., 1908, **14**, 484.
Molisch: Wien. Akad. Wissensch., 1912, **121**.
Chambers and Russ: Proc. Roy. Soc., 1912, **5**, 198.
Perthes: Wien. klin. Wchnschr., 1914, p. 593.
Finzi: Lancet, London, 1911, **1**, 1339.
Hill: Brit. Med. Jour., 1914, **2**, 1017.

After-Care of Poliomyelitis.—Oct. 1, 1916, there were in the state, outside of New York City, 2,582 patients recovered from poliomyelitis. A plan for the care of these children was outlined in accordance with that carried out by the State Board of Health of Vermont, under the direction of Dr. Robert W. Lovett, Boston, who has supervised the work in New York. Up to January 1, fifty-three clinics had been held in various parts of the state, and 1,590 patients had been examined. Of these 182 were paralyzed prior to 1916; forty-nine had other orthopedic conditions, and no paralysis was evident in 186 cases. In sixty-six cases some form of operation was necessary in order to restore function. There were 352 health officers and 580 other physicians present at the clinics. For the purpose of providing follow-up care, the state was divided into eight districts, each in charge of a supervising nurse, four of whom had received special instruction in muscle training at the Children's Hospital in Boston, and four of whom had been trained by actual experience in clinics.

SOME FACTORS ALLEGED TO INFLUENCE THE DURATION AND SEVERITY OF VACCINIA *

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AND
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This paper gives the results of some experiments undertaken to determine what influence would be produced on the duration and severity of vaccinia by the use of different preparations of vaccine, and various methods of treating the vaccinia vesicle.

TECHNIC OF VACCINATION AND COURSE OF RESULTING VACCINIA

In order to secure uniformity, the following technic, discussed at length in a former paper,[1] was employed throughout this series:

The arm in the region of the deltoid insertion was washed with alcohol and dried with sterile cotton. A small chisel provided with a carbon steel point was sterilized by dipping in alcohol and flaming. Three circular scarifications, each 2 mm. in diameter, were made through the epidermis by rotating the chisel edge against the tightly drawn skin. A sterile toothpick was used to transfer a drop of smallpox vaccine from its containing vial to the three scarifications, and to rub it into the exposed derma. The site of the vaccination was then covered with a square of sterile gauze held in place by adhesive tapes on one of which was stamped the return date, five days subsequent to the day of vaccination.

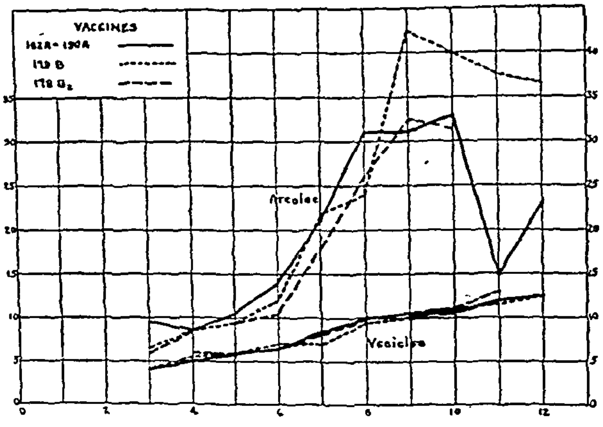

Fig. 1.—*Comparative measurements of vaccinia lesions.*

The vaccinia produced by this technic follows a fairly constant course. In a group of about 300 vesicles measured on the fifth day, the minimum diameter was 3.5 mm., the average fell between 6 and 6.5 mm., the maximum was 9 mm., while 70 per cent. were between 5.5 and 7.5 mm. The vesicle attains its maximum development on the eleventh day with an average measurement of 12 mm. Between the eleventh and the fifteenth day, the vesicle rapidly dries and shrinks to a brown scab which, in at least 60 per cent. of the cases, becomes loose enough to be easily detached by the twentieth day. The areola surrounding the vesicle closely parallels its growth until the seventh day, when it increases rapidly in size from an average of 10 mm. to an average of 40 mm. This sudden increase of the areola marks the rise of antibody formation; the vaccine organisms are digested, their toxic products give rise to the constitutional symptoms of fever and headache, while the change from vesicle to pustule marks the end of the vaccine colony. The areola rapidly shrinks to the size of the scab and gives color to the fresh scar, which averages 11 mm. in diameter.

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* From the Laboratory of Hygiene, University of California.

[1] Force, J. N.: An Investigation of the Causes of Failure in Cowpox Vaccination, The Journal A. M. A., May 9, 1914, p. 1466.

VACCINIA LESIONS

Produced by Various Preparations of Smallpox Vaccine.—In order to determine whether the lesions following vaccination were influenced by the method of preparation of the vaccine, a comparison was made of the average daily measurements of vaccinia lesions, produced in three groups of persons by three preparations of smallpox vaccine:

> Vaccines 182 A and 190 A, after being ground in glycerin in the customary manner, were incubated at 37 C. (98.6 F.), in order to secure the development of contaminating spores and the subsequent destruction of the resulting organisms by the glycerin. Vaccine 179 B was exposed to the action of ether for two and one-half hours after being ground in glycerin. The ether was then driven off by a current of air and the vaccine held for two weeks, pending the result of the tetanus test. This vaccine had a high bacterial count when finally released for our use. Vaccine 179 B_2 was exposed to ether for three hours, and was practically sterile when released for our use.

The comparison of the lesions produced by the three types of vaccine resulted in the following conclusions, as shown in Figure 1:

1. The development of the vaccinia vesicle is remarkably constant, irrespective of the preparation of vaccine employed.
2. There is little choice between incubated and etherized vaccine, as far as local reaction is concerned.
3. The maximum areola formation was slightly greater in the vaccine with the highest bacterial count, but this excess was not enough to suggest that it might be due to the action of pyogenic cocci contained in the vaccine.
4. It would appear that a vaccine capable of passing the tetanus test might be released without reference to its total bacterial count.

Produced by Vaccinating Each Person in a Series with Two Preparations of Vaccine.—In order to determine whether the lesions following vaccination of the same person with two preparations of vaccine would show constant differences in favor of one or the other preparation, a comparison was made of the daily average measurements of vaccine lesions, produced by vaccinating each person in a series with the following preparations of smallpox vaccine:

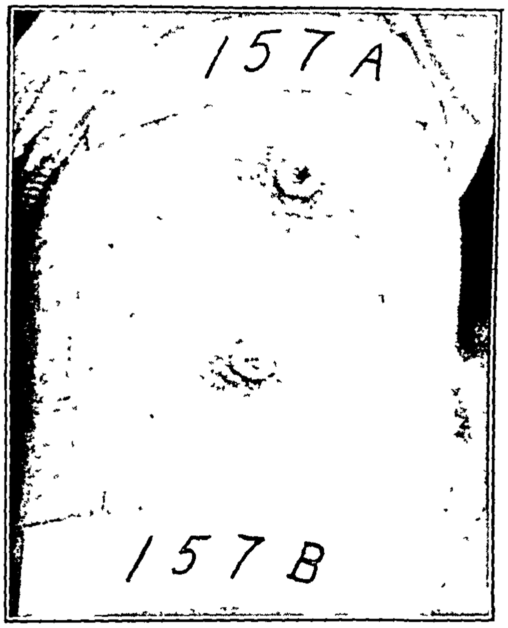

Fig. 2.—Vaccinia: upper vesicle produced by vaccination with ordinary glycerinated smallpox vaccine, lower by etherized vaccine; no marked difference in lesions.

> Vaccines 156 B and 157 B were etherized as described above. Vaccines 156 A and 157 A were not incubated after grinding, but were stored until a satisfactory minimum bacterial count was obtained.

A comparison of the measurements listed in the accompanying table showed that there was no reduction in severity of local reaction, as would have been indicated by consistently smaller areolae obtained by the use of etherized vaccine. Figure 2 reproduces a photograph taken at the height of one of these vaccinias, and shows that there was no marked difference in the lesions produced by the two preparations of vaccine.

Comparison of Treated and Untreated Vaccinia Lesions.—Several methods have been suggested for reducing the amount of inflammation, shortening the course, and lessening the chances of secondary infection in vaccinia. Schamberg and Kolmer[2] advocate painting the vesicles at the end of forty-eight hours with a 5 per cent. alcoholic solution of picric acid. Dyer[3] asserts that the proverbial "sore arm" is prevented and the scar reduced to a minimum by painting the vesicles, as soon as they appear, with tincture of iodin, clipping the top with sterile scissors, and cauterizing the base with a 6 per cent. solution of silver nitrate.

DAILY AVERAGE MEASUREMENTS OF VACCINIA LESIONS PRODUCED BY ETHERIZED AND UNETHERIZED VACCINE IN EACH PERSON OF A SERIES

Days after Vaccination	Vesicles 156A-157A mm.	Vesicles 156B-157B mm.	Areolae 156A-157A mm.	Areolae 156B-157B mm.
4	4.5	4.0	5.5	6.0
5	5.5	5.0	8.5	8.0
6	6.0	7.0	8.5	11.5
7	6.0	5.0	8.5	8.0
8	9.5	10.0	27.5	25.0
9	9.5	9.5	23.0	25.5
10	9.5	9.5	19.5	20.5
11	10.0	11.0	33.0	37.0
12	12.0	11.5	21.0	20.0

As soon as the vesicles appear, Unna[4] applies a mixture of eight parts of zinc oxid ointment with one part each of calcium carbonate and sulphur lotum. This, he says, prevents redness and swelling, and shortens the duration of the vaccinia.

In order to compare the results of these three treatments with the results of our usual technic, the methods of Schamberg, Dyer and Unna were employed for the treatment of vaccinia lesions beginning on the fifth day following vaccination. Measurements of the areolae, vesicles and scabs were taken whenever the subjects returned for dressings. A series of untreated lesions was measured as a control. The daily averages of all measurements were plotted (Figure 3) as well as the daily percentages of persons dismissed (Figure 4). A study of these charts brings out the following:

1. The course of a normal vaccinia is fairly constant; the maximum development of the antibody occurs on the tenth day, while the maximum scab separation takes place on the twentieth day after vaccination.
2. The average daily measurements of lesions resulting from multiple small insertions of smallpox vaccine were practically constant, whether the lesions were untreated or treated by any of the three methods described.
3. By the twentieth day after vaccination, 64.5 per cent. of seventy-eight untreated persons, 63.5 per cent. of seventy-five treated by the method of Unna, 70.5 per cent. of ninety by the method of Schamberg, and 72 per cent. of twenty-five by the method of Dyer were dismissed with the scabs off.

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[2] Schamberg and Kolmer: The Treatment of the Vaccination Site with Picric Acid Solution, Lancet, London, 1911, **2**, 1397.

[3] Dyer: The Way to Vaccinate, Am. Jour. Trop. Dis. and Prev. Med., 1913, **1**, 425.

[4] Unna: Naessende Ekzeme, Berl. klin. Wchnschr., 1915, **52**, 281.

4. It does not appear that any of the three methods tested possesses any great advantage over our method, so far as decrease in redness and shortening of the course of the vaccinia are criteria for judgment.

COMMENT

The experiments described above show that the duration and severity of vaccinia are not influenced to any marked degree by variations in the methods of preparing the vaccine or by treatment of the vaccinia vesicle. We are forced, then, to conclude that the vaccinia of long duration and marked severity is a result of improper vaccination technic.

At the opening of each semester at the University of California, a number of new students from distant portions of the state apply to the infirmary for treatment of the lesions following vaccinations by their home physicians. Observations, extending over several years, of the methods employed and results obtained in these vaccinations have convinced us that the subject of vaccination technic has not been completely mastered. The cross-scarified site, covered by corn plaster, vaccination shield, or even tightly drawn adhesive tape, represents the beginning of an improperly performed vaccination, as surely as a 6-weeks-old, dollar-size, slowly granulating ulcer typifies its close.

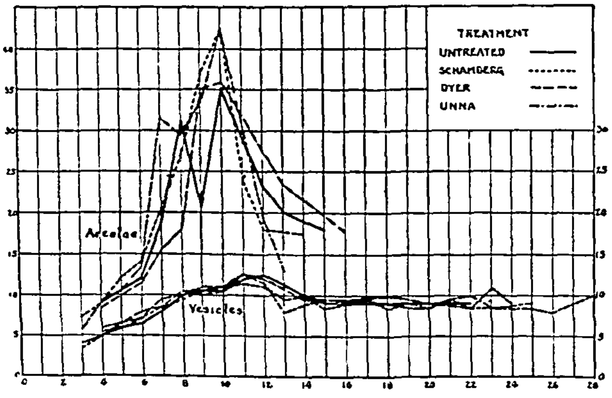

Fig. 3.—Comparative measurements of vaccinia lesions.

The first step in securing efficient vaccination is to acquire a more general knowledge of the pathology of vaccinia. For many years, the manufacturers of smallpox vaccine have been striving to give us a product which would be practically free of bacteria and yet retain its potency. The manufacture of a product of this character has no doubt been stimulated by a disposition on the part of vaccine users to attribute unfortunate results of faulty technic to "something in the vaccine." An English manufacturer was convicted some years ago of adding croton oil to his smallpox vaccine. His defense was that physicians demanded a sore arm on revaccination and, as the vaccine alone would not cause it, he was endeavoring to supply the demand. A better understanding of the normal course of secondary vaccinia, or vaccinoid, would have made such a demand impossible.

Smallpox is a septicemia. If the infection is severe, we have a true hemorrhagic condition with no tendency for the organism to become localized; if less severe, the smallpox organism is arrested in the skin and there destroyed. Pus is formed in the smallpox lesion as an end-product of the struggle between the antibodies and the arrested organisms. Its production is not influenced by the pyogenic cocci, present normally in the skin.

Only in the late stages was Roger[5] able to demonstrate bacteria in smallpox pustules, and their appearance then was by no means constant. According to Ashburn,[6] we may assume that the same relationship exists between smallpox and vaccinia as between the "street" and "fixed" virus of rabies. We should, therefore, expect to find a certain amount of pus normally in the vaccinia lesion, even when we employ a bacteria-free vaccine. Any excess over this normal amount would represent the results of secondary infection, not necessarily, from the pyogenic cocci, normal to the skin, since Roger asserts that they may be disregarded; not ordinarily from the vaccine, since Francis[7] has demonstrated the impossibility of conveying even tetanus to monkeys by means of artificially contaminated vaccine; but, from outside infection, made possible by a combination of faulty vaccination technic and improper care of the resulting lesions. This secondary infection is not the worst chapter in the whole disgraceful story. The victim, finally recovered from his "awful arm," secure in the belief that he is protected by a "good take," often falls a prey to smallpox, for the secondary invaders have destroyed the vaccine organisms, and his big scar is only evidence of a sloughing ulcer. However, he has not suffered in vain, for is not his history preserved in the archives of the antivaccinationists as another example of the "failure of vaccination to protect against smallpox"?

THE USE OF SMALL MULTIPLE SCARIFICATIONS

Given a smallpox vaccine of proved potency, we believe that, in persons previously unvaccinated, uniformly successful vaccinias, uncomplicated by secondary infection, may be secured by the use of small multiple scarifications. Although we read Jenner's "Inquiry," many years ago, it was only recently that we saw a photographic reproduction of his drawings of vaccinia, and we were much gratified to note the strong resemblance of our lesions to his "half pearl on a rose leaf." Since the vaccine colony grows only in unbroken skin, we wish to confine this growth to the smallest possible area for any one insertion. While Jenner was a consistent advocate of the small scarification, he was content to produce a single scar. Our choice of three points of insertion is in accord with the following statements made by McCollum, in a letter to Cody:[8]

> I am thoroughly convinced that there should always be three insertions of virus. Three reasonably good scars is a fairly sure indication of protection, but the mistake must not be made of thinking that because a person has a large scar it is an indication of successful vaccination.

During the Liverpool epidemic of 1902-1903, Hanna[9] made careful measurements of the scar areas of persons who had been vaccinated in infancy. His subjects were divided into two groups: persons who had never had smallpox, and smallpox patients. This study showed that the average scar area in persons who had never had smallpox was, for all ages, greater than the scar area of smallpox patients for corresponding ages.

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[5] Roger: Infectious Diseases, New York and Philadelphia, Lea Brothers & Co., 1903, p. 265.

[6] Ashburn, P. M.: The Relationship of Variola and Vaccinia, The Journal A. M. A., April 19, 1913, p. 1220.

[7] Francis: Laboratory Studies on Tetanus, Bull. 95, Hyg. Lab., U. S. P. H. S., 1914.

[8] Cody: Vaccination Efficiently Performed, Boston Med. and Surg. Jour., 1914, **170**, 369.

[9] Hanna: Studies in Smallpox and Vaccination, William Wood & Co., New York, 1913, p. 27.

Also, the average scar area of the group of smallpox patients was greater, for all ages, than the average scar area of those members of the same group who had confluent or fatal cases of smallpox. The maximum average scar area among persons who had never had smallpox was 1⅒ square inch. The vaccination instructions of the Local Government Board of England call for one-half square inch of pitted surface (3 square centimeters), an amount which is approximated by the sum of the areas of the three scars produced by our method.

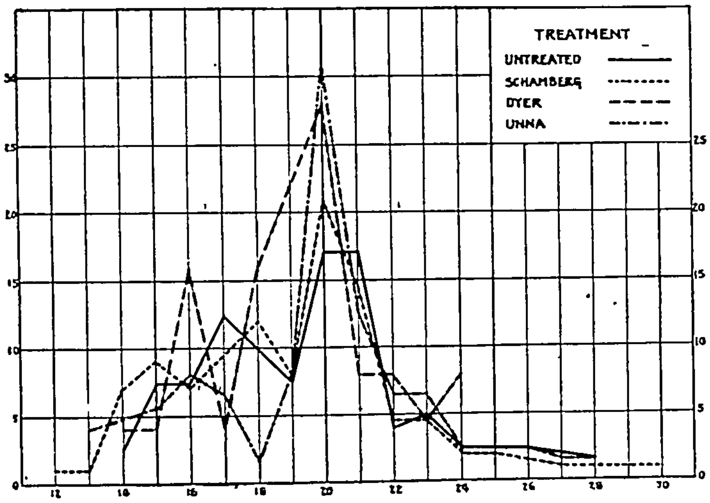

Fig. 4.—Dismissals.

In sharp contrast is the result produced by a single cross-scarification. The exuding serum tends to form a crust which furnishes anaerobic shelter for possible secondary invaders, as tetanus spores; the large rambling vesicle is easily broken, and, since the vaccine growth is outside the central crust, there is every tendency for it to be cut off from nourishment. Here are combined in one lesion the possibilities of infection under the crust, infection of the skin beneath the broken vesicle, and a central slough with resulting slowly healing ulcer. Although the vaccination shield has a tendency to macerate the skin, through the action of confined moisture, there is some excuse for its use to protect the large rambling vesicle resulting from cross-scarification, since this vesicle is very easily broken. On the other hand, the small vesicles produced by our vaccination seem remarkably tough, and we employ a dressing which does not tend to delay the drying.

CONCLUSIONS

1. Severity of local reactions following vaccination is apparently uninfluenced by the method of preparation of the vaccine or the bacterial count at the time of release (Fig. 1).

2. The course of a primary vaccinia is apparently uninfluenced by treatment with antiseptics (Figs. 3 and 4).

3. The prevention of secondary infection following smallpox vaccination depends essentially on the use of small multiple scarifications which, when inoculated, give rise to small vesicles which are not easily broken, and do not foster anaerobic conditions and a central slough.

Progress in Society.—The gradual and steady improvement of social conditions and of all social and governmental institutions, and the gradual elimination of conditions which impede progress are the only sure bases of future progress.—Burdette G. Lewis.

THE ELECTROCARDIOGRAPH AS AN AID IN THE DIAGNOSIS OF CARDIAC VALVULAR DISEASE *

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Although the electrocardiograph has been much used in the diagnosis of the arrhythmias and of myocardial disease, yet the use of the information which it gives in regard to the hypertrophy of the various chambers of the heart has been considerably neglected. It is my present aim to call attention to this information and to show how it can be made use of in the examination of the heart, and especially to show of what value it may be as an aid in the diagnosis of valvular lesions.

Each valvular lesion leads to the hypertrophy of one or more of the chambers of the heart, and this hypertrophy has an effect on the electrocardiogram of the individual. Hypertrophy of the auricle is shown by an increase in the height of the wave P, over 2 mm., as seen in Figure 1, being abnormal. Hypertrophy of the right ventricle is also shown in Figure 1, the electrocardiogram having the R wave turned downward by Lead I and upward by Leads II and III. Hypertrophy of the left ventricle is shown, as in Figure 2, by a record having the R wave of Lead III turned downward, while it is turned upward by Leads I and II.

Perhaps it might be well to define the term "lead." It is the method of leading off the heart's current from the body to the galvanometer. For Lead I the right arm and left arm are connected to the instrument; for Lead II the right arm and left leg, and for Lead III the left arm and left leg. By each of these leads there is obtained a slightly different curve, even from a normal heart, as is seen in Figure 3; but the curves are all alike in showing a small wave, P, due to the auricle, and a tall, sharply pointed wave, R, and smaller peak, T, both due to the ventricle. In records from normal hearts the R wave is directed upward in all three leads, and in such hearts it has been found that the relation of the weight of the left ventricle to that of the right ventricle varies from 2:1 to 1.5:1. If

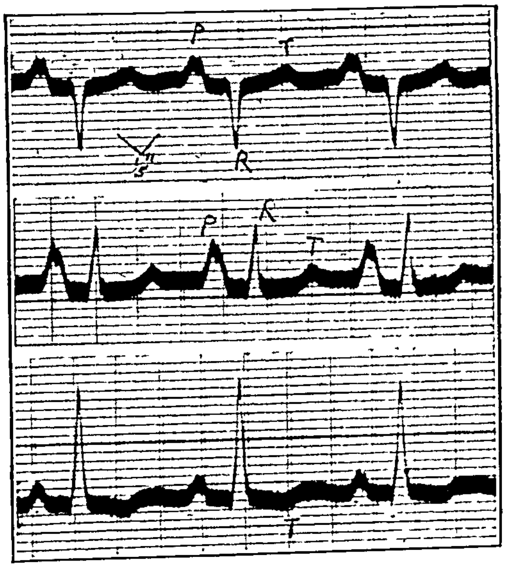

Fig. 1.—Record from a patient with mitral stenosis. In this and the succeeding records the time interval between the corresponding line of successive pairs of ordinates is one fifth second. The distance between abscissae—1 mm. in the originals—represents 1/10 millivolt. Records are to be read from left to right.

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* From the medical services of the New York Hospital, and the Department of Medicine of Cornell University Medical College.

either the right or left ventricle becomes hypertrophied, this proportion is disturbed, and the R wave of the electrocardiogram will vary accordingly, as has been described above.[1]

Dilatation does not disturb this mass relation of the ventricles, and therefore does not have this effect on the R wave — an evident means by which we are aided to distinguish hypertrophy from dilatation.

Suppose, then, that a mitral stenosis is suspected. The electrocardiogram should show the effect of the resultant hypertrophy of the right ventricle in a downward RI,[2] or perhaps of the hypertrophied auricle in an abnormally large P wave. If this sign of right side hypertrophy is absent, it should be considered as evidence against the presence of the mitral lesion. Figure 1 is from a case of mitral stenosis, and shows typically both of these signs — really the results — of this lesion.

When there is suspicion of an aortic regurgitation, we should expect to find, if the aortic leak is present, the downward RIII of left ventricular hypertrophy as in Figure 2, while the absence of this sign would point to the absence of the lesion.

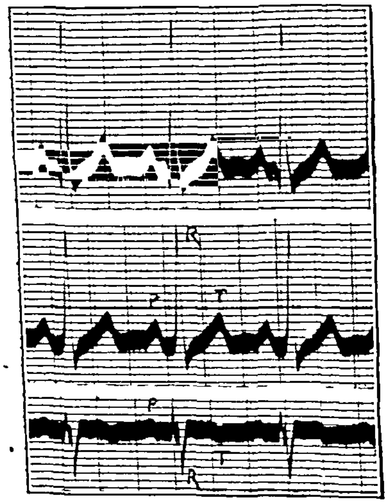

Fig 2 —Record from a patient with aortic regurgitation.

Mitral regurgitation also leads to a hypertrophy of the left ventricle, so that a suspicion of this type of valvular disease would be confirmed by the finding of a downward RIII. Figure 4 is from an early case of this type, and shows a very small downward RIII, indicative of a slight degree of left ventricular predominance. When mitral regurgitation is of marked degree or of long standing, the left ventricle, even aided by the hypertrophy and dilatation which takes place, is unable to pass along the blood fast enough to prevent pulmonary stasis. This makes more resistance for the right ventricle to overcome, so that this also undergoes a hypertrophy. The result, then, is that, both ventricles being hypertrophied, the heart as a whole shows what might be called a balanced hypertrophy, and the mass relation of the ventricular weights is brought within normal limits. Figure 5 is typical of this, and shows, as is usual in such cases, an upward R wave in all three leads.

So much, then, for the simple cases with only a single valvular defect. When there is more than one lesion present it is necessary to consider the effect on the heart of each lesion separately, and to view the electrocardiogram in the light of this knowledge. When mitral stenosis and aortic regurgitation occur together, each acts to cause hypertrophy of one of the ventricles, so that the result is that a balanced hypertrophy is produced and the electrocardiogram is of the normal type. If a heart with evident mitral stenosis shows signs, such as a heaving apex beat, enlargement downward or an indefinite basal diastolic murmur, which cause us to suspect an aortic leak, then the finding of a downward RI will be evidence against this lesion, while if the R waves are all upward its presence will be confirmed. With a plain aortic regurgitation and a diastolic rumble at the apex, it is often difficult to decide whether the latter is due to mitral stenosis or is a Flint murmur. If the suspected murmur arises by the mechanism described by Flint, there will be no effect on the right ventricle, and the electrocardiogram will show the downward RIII of left hypertrophy. If the suspected murmur is due to mitral stenosis, a balanced hypertrophy will be produced and an electrocardiogram will be of the type of Figure 3.

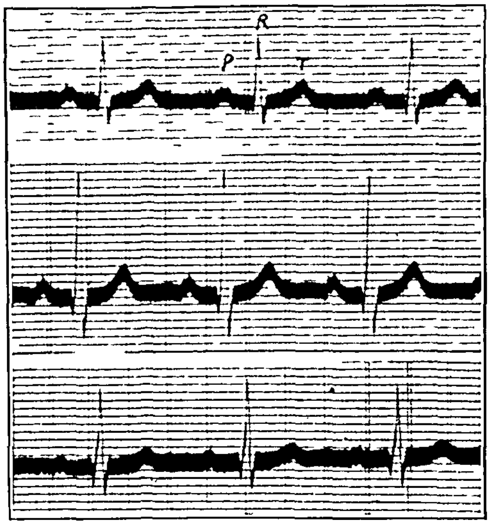

Fig 3 —Normal electrocardiogram, from a patient with lobar pneumonia

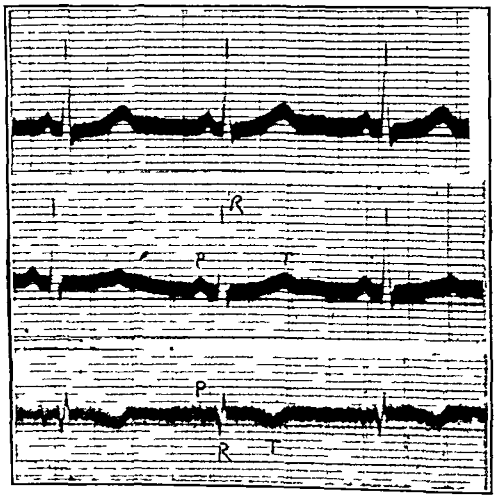

Fig 4 —Record from a patient with an early stage of mitral regurgitation.

Remembering what was said about well marked mitral regurgitation, it is quite plain that aortic regurgitation or mitral stenosis when combined with this will become evident in the record by the presence of the hypertrophy which they characteristically produce. This fact is especially useful in deciding the character of the low pitched diastolic rumble often heard at the degree of protection against further deformity which I believe it is impossible to obtain with any other brace.

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[1] Lewis Observations on Ventricular Hypertrophy, Heart, 1914, 5, 367

[2] The Roman numeral following the letter refers to the lead by which the designated wave is obtained

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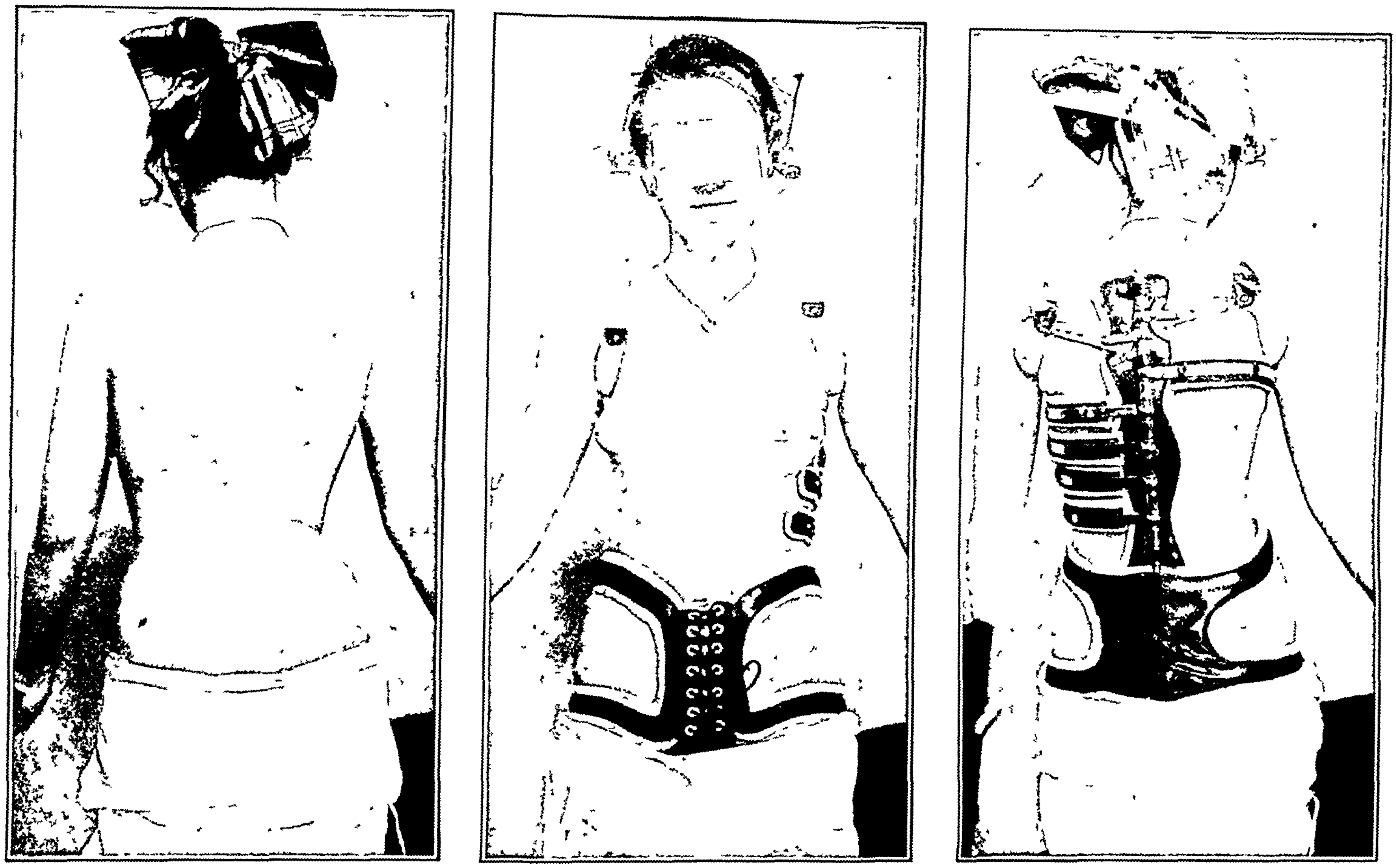

Figs. 2, 3 and 4.—Patient with pronounced paralytic scoliosis and with brace. This is the style of brace now being used. The pelvic portion is adapted from a sacro-iliac brace first kindly furnished to the author by Dr. R. B. Osgood. It grips the pelvis firmly without discomfort. The other portions of the brace have been reinforced and are stronger, but not materially changed otherwise.

Any degree of flexion or extension of the spine may be provided for by bending the vertical rod before construction of the brace on the patient is begun.

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Whooping Cough.—An issue of the New York State *Health News* is devoted to the whooping cough situation in the state. Whooping cough, which is usually classed as one of the minor diseases of childhood, has carried off more lives in New York during the past five years than the much more dreaded scarlet fever. The total number of deaths from scarlet fever during the years 1911-1916 was 2,904, equivalent to an average rate of mortality of 5.9 per hundred thousand total population. During the same period 3,739 children died from whooping cough, which corresponds to an annual death rate almost 30 per cent. higher than that of scarlet fever—7.6 per hundred thousand. In the year 1916, whooping cough ranked next to measles as a cause of death in this state, taking almost as many lives as typhoid fever (593), and scarlet fever combined, 745. In the past ten years the death rate from whooping cough has fluctuated between seven and nine per hundred thousand, with only a slight downward tendency.

CAUTION AGAINST THE USE OF NON-NEUTRALIZED (ACID) SOLUTIONS OF SALVARSAN

Jay Frank Schamberg, M.D., Philadelphia

A recent experience which has been brought to my attention prompts this note of warning against the advertent or inadvertent use of non-neutralized solutions of salvarsan. A physician administered to two patients, respectively, 0.4 gm. of arsenobenzol in 30 c.c. of water, *but failed to neutralize by the addition of sodium hydroxid solution.* Both patients developed alarming symptoms. The first patient complained of pain in the epigastrium, in the substernal region and in the left shoulder; later she had abdominal pains with nausea and vomiting. An irritating cough began which at the end of five days had not disappeared. The vein in which the solution had been introduced began to thrombose, and was thickened and painful for a length of 6 inches.

Immediately after the injection, the second patient developed cough and pain in the left shoulder, and the substernal and precordial regions. There was difficulty in breathing, and altogether the symptoms were alarming.

It now appears that these patients will recover, although a fatal termination might readily have taken place. It will be recalled that Fraenkel and Grouven, in the early days of the use of salvarsan, gave a patient 0.4 gm. in 15 c.c. of water; to this was added from 1 to 1.5 c.c. of a decinormal solution of sodium hydroxid. Despite this addition, the solution was still strongly acid. The patient died in three and one-half hours. The toxicity of acid solutions of salvarsan is lessened if they are given in great dilution. A year ago, a physician informed me that, acting under misapprehension of the instructions, he had administered arsenobenzol to two patients without neutralizing the solution; no reactive symptoms whatsoever developed. In this instance, however, from 100 to 150 c.c. of water were used. A few years ago, Prof. H. E. Hering of Prague called attention to the greatly increased toxicity of acid solutions of salvarsan as compared with alkaline solutions.

Dr. John A. Kolmer, Dr. George W. Raiziss and I, in a series of experiments, the publication of which is now in press, have shown that acid solutions of salvarsan administered intravenously in rats increases the toxicity from 50 to 60 per cent. This is true even in such concentration of the drug as is represented by from 0.5 to 1 per cent. solutions, the equivalent of 0.6 gm. in from 60 to 100 c.c. of water. The toxicity of acid solutions increases proportionately to the concentration of the solution. Max Joseph says that acid solutions produce a precipitate in the blood which may actually be seen in the lungs and in the right ventricle of experimental animals. The cough, which the patient referred to above developed, was doubtless due to the production of small emboli in the capillaries of the lungs.

It would seem that some physicians have confounded some of the salvarsan compounds which have been marketed under various trade names with neosalvarsan, and therefore have failed to neutralize the solution, an error which might have jeopardized the life of the patient.

1922 Spruce Street.

ESOPHAGEAL STRICTURE

J. J. South, M.D., Massillon, Ohio

J. S., boy, aged 11 years, drank about an ounce of lye late in February, 1916. He was given the usual demulcent and sedative at the time, placed on a bland restricted diet, and made what appeared to be an uneventful recovery. When able to eat almost anything he wished and seemingly in excellent health he was sent to his grandmother's in another town, and I did not see him again until July. One evening in the latter part of the month his mother carried him into my office in her arms. He looked almost moribund. He was nothing but skin and bones. His mother told me that he had eaten nothing in two weeks, and that during the last few days he could get but little water down. He complained incessantly of thirst, so I offered him water; but it would go down a certain distance and then be regurgitated. I tried to pass a small catheter bougie in order to relieve his immediate craving, but without success.

He was removed to the hospital immediately, and during preparation for operation was given water by bowel and venoclysis. Under ether the abdomen was opened through the left rectus incision, the stomach was drawn into the wound and incised, and a long rubber tube inserted. Owing to the patient's condition, it was impossible to attempt any operative procedure on the esophageal stricture, so he was returned to bed.

He improved steadily and was fed by tube: He was given liquids at first and then soft food. Finally he chewed solid food and spat in into the tube. Two weeks after the operation we began gradually dilating the stricture by means of bougies by mouth, and after a few days permitted the patient to take liquids and later soft foods in small quantities. It was not long until he took the regular hospital diet. As he swallowed it easily, the tube was removed and the fistula allowed to heal.

We kept the patient under observation two weeks longer, keeping the stricture dilated at regular intervals. I had in mind to discharge him one day when the nurse reported to me that he was unable to swallow and seemingly as much distressed as before the operation. I saw him at lunch. All food was regurgitated and a bougie could not be passed beyond the stricture area. It occurred to me at the time that we were dealing with a spasmodic condition superimposed on the true stricture. The patient was given a few drops of chloroform, and an unsuccessful attempt was made to pass a bougie; on regaining consciousness, he was still unable to swallow.

Preparations were then made to reinsert the gastric tube. While I was in another part of the institution, the nurse in my absence insisted on his attempting to swallow some liquid, which made him vomit, and he threw up a wad of chewing gum, the size of a small marble, and about as hard. I recalled to my chagrin that, against my better judgment, I had permitted him the privilege of chewing gum a few days before. He was entirely relieved and could swallow as well as ever. He was discharged a few days later, and up until the middle of November had remained well. The hard mass of gum had been stopped at the strictured area, where it acted as a perfect ball valve.

A NEW OCULAR MUSCLE SYMPTOM IN EXOPHTHALMIC GOITER

George Francis Suker, M.D., Chicago
Ophthalmic Surgeon, Cook County Hospital

In the examination of a number of exophthalmic goiter patients for the purpose of determining the relative frequency of the various eye symptoms and signs, this peculiar action of the lateral eye muscles was noted in many:

After extreme lateral rotation of the eyes, either to the right or to the left, with the head fixed and with fixation of an object at this point maintained for a second or two, on attempting to follow this fixation point as it is rapidly swung into the median line, one of the eyes—it may be either—fails to follow the other in a complementary manner into proper convergence and fixation for this point when it is brought into the median plane. Either the right or the left eye makes a sudden rotation into the fixation with its fellow, but before it does so, an apparent divergent strabismus is manifest.

A muscle balance for esophoria or exophoria was taken in each case. In those in which there was an exophoria of greater or lesser degree, this apparent divergence was more marked than in those cases in which there was no exophoria. This apparent divergence was not as marked in cases in which an esophoria of any appreciable degree was present.

For example, if after extreme rotation to the right and fixation of an object in this position, the object is rather rapidly brought into the median horizontal plane, the left eye follows the object properly, but the right lags behind in the corresponding rotation into median plane fixation, but it eventually jumps, as it were, into proper convergence and fixation with the left eye.

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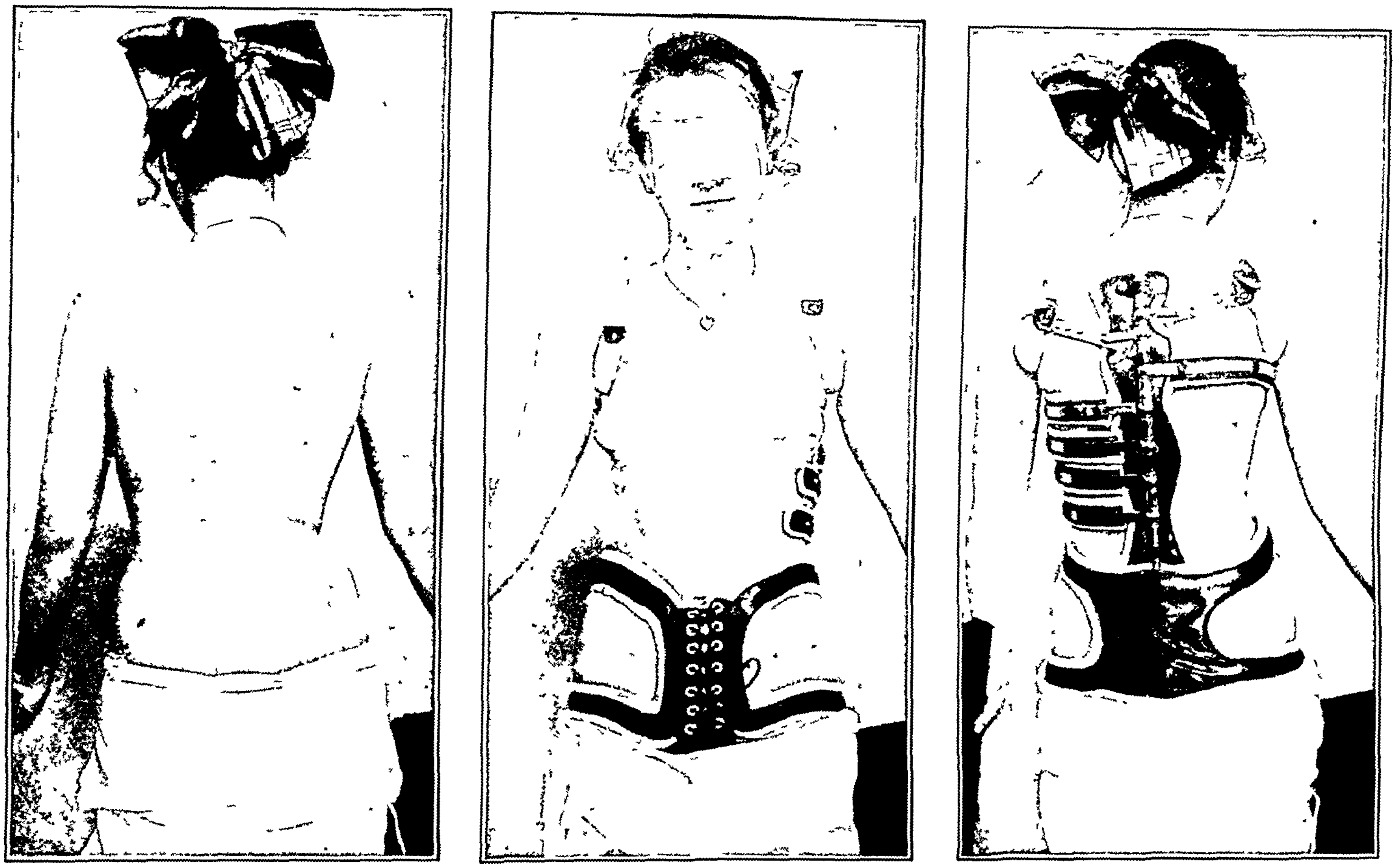

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Therapeutics

DISTURBANCES OF THE KIDNEYS.

(Continued from page 1179)

THE CLOTHING

2. A nephritic patient should avoid being chilled, since, if his skin is cold or chilled, internal congestions occur. As nephritis progresses the skin usually becomes dry, normal perspiration decreases, and in the later stages may be almost absent; consequently, that which tends to promote the health of the skin as an excretory organ is advantageous. Though warm clothing should be worn during the cold season, this does not signify that constant profuse sweating should be caused. The patient should be covered warmly, at night, but should have plenty of fresh air to breathe.

If possible, the winter should be spent in a warm, dry climate, that of Arizona, New Mexico or the central part of Southern California being preferable; or he may go to a more humid warm climate, like that of southern Florida, the West Indies, or the Hawaiian Islands. As a general rule, a hot dry climate is better for chronic nephritis than a cold dry climate, but either is better than a changeable moist climate.

Daily warm baths are of great benefit to these patients. If in a cold climate, the bath should be taken just before retiring. Hot, stimulating baths are not advisable; cold baths should be entirely avoided, and sea bathing or fresh water bathing, at any season of the year, in whatever climate, should be prohibited.

3. The skin should be kept soft and pliable by warm bathing and by exercise, and if exercise is impossible, by massage. If the skin becomes dry, oil of theobroma (cacao butter) or other bland oils should be rubbed into it. When, notwithstanding these measures, the skin ceases to be a good excretory organ, prospect of recovery is discouraging.

The greater the insufficiency of the kidneys, and the greater the amount of salt thrown off by the skin, the more itching there is likely to be. This itching is not as serious a sign as in liver disturbances and in jaundice, but may cause scratching and consequent eczema. Anything promoting circulation in the skin, such as warm baths, gentle massage or the rubbing in of oil, tends to prevent or stop the itching. Any particular eczematous spot should be treated as any other eczema with a local sedative, or, if necessary, with stimulating ointments. The water used for bathing should be as soft as possible — bran may be used to soften it. The skin should be dried with soft towels.

4. Hydrotherapy promotes the normal excretion and health of the skin. Another indication for hydrotherapeutic measures is obesity and high blood pressure. The extent to which these methods should be employed depends entirely on the sufficiency of the circulation. If the heart is weak, even though the blood pressure may be high, only the mildest water treatments should be used. The Turkish bath is perhaps the most popular of the severer hydrotherapeutic measures. If the patient is obese, reacts well, perspires freely, and rests after the treatment, such a bath taken once a week is beneficial to him. He should be allowed to drink plenty of water after this bath so that the urine will not become too concentrated from the withdrawal of water through perspiration. Severe cold applications after such baths are inadvisable. Unless the kidneys are severely injured, the principal excretion by the skin is water, with a certain amount of sodium chlorid. Other salts are excreted only in minute quantities. If edema occurs, the only heat baths advisable are the electric light cabinet baths, or body baking, and the cabinet bath has really superseded the body bake, as exhausting the patient less and having a less injurious effect on the heart. These measures reduce the blood pressure, temporarily at least. Provided these measures are adapted to the circulation, they are beneficial and relieve kidney congestion to a certain extent. These baths are not needed in warm climates. Care should be taken that the patient does not become chilled or catch cold afterward. The majority of patients, however, will derive as much benefit from warm baths taken at home, especially if followed by massage, and if the diet is suited to the patient's condition and weight. If a patient thus "knocked out," so to speak, by the severity of the treatment, is very thirsty, and drinks a considerable amount of water, or is very hungry and eats too much, and if the blood pressure immediately rises to its former height, the benefit derived is reduced to a minimum. These measures are most emphatically contraindicated in any patient with cardiac insufficiency, or who is prostrated by the treatment.

High frequency current treatments to reduce blood pressure are inadvisable for a patient with chronic nephritis. The blood pressure is reduced only temporarily, if at all, and the patient is often made nervous by these treatments. Other measures to reduce blood pressure are preferable.

The administration of radio-active waters for chronic nephritis is still so little understood that their value can neither be asserted nor refuted.

The application of hot packs and other local heating measures in chronic nephritis will be described under the treatment of uremia, as they are indicated only in uremic conditions.

Carbonic acid baths, whether taken at springs and cures, or under artificial conditions at home, should ordinarily not be used in chronic nephritis. It should also be remembered that hypertension is only one symptom of chronic nephritis, and whether or not such baths are valuable in the treatment of some forms of hypertension is not now under discussion.

5. The amount of exercise that a chronic nephritis patient should take depends on his circulation and weight. If he is overweight, and his circulation is good, considerable exercise should be taken, until good, healthy perspiration is produced, after which a warm bath and rub-down are advisable. If he is on the borderline of kidney insufficiency, overexertion may readily cause an imbalance, and any severe muscle strain or hard muscle work may precipitate uremia. The value of vigorous exercise used in a man's business or prescribed when his work is sedentary is to increase muscle nutrition and muscle circulation, to relieve the congestion of the organs of metabolism and excretion, and also to prevent the increase of fat. By such exercise, too, the circulation of the skin is increased and the skin excretions become more normal. If a patient has a weak heart or the blood pressure is high, exercise must be carefully regulated in order to aid and not injure him. The Oertel graded exercises should be modified to fit the individual. If he feels full-headed and has throbbing in the chest or cardiac pain and the blood pressure is increased, the exercise is excessive. If the blood pressure is too much lowered by exercise, it must be modified.

6. If the bowels do not move daily and thoroughly in chronic nephritis, they must be stimulated artificially. Daily catharsis is not necessary, and is harmful. If the patient is obese, a saline preparation taken daily before breakfast in sufficient amount to cause one or two movements may be the best treatment, depending on the amount of intestinal gas that it causes; if a large amount of gas is caused, a vegetable cathartic should be substituted. If the patient is not obese, the blood tension not excessively high, and the kidneys excreting fairly well, a daily vegetable laxative drug, as cascara, aloin, rhubarb or podophyllin, or any combination of these drugs, is much better. Phenolphthalein should seldom be used in chronic nephritis. If the bowels can be regulated by the diet, that is, by the use of fruit, agar agar, whole wheat bread or bran bread, this is preferable, and no drug should be administered. Liquid petrolatum may be used for a time, if satisfactory, but when used very long it is liable to inhibit the secretion of the stomach and intestinal digestive juices, and to cause indigestion. It may make the excretions so oily that the sphincters do not act perfectly, much to the discomfort of the patient.

Once a week, unless the bowels move freely, catharsis may be caused by calomel and a purgative, by castor oil, or by a large dose of saline. The best time to take this is on the day on which the patient should ordinarily reduce his diet to the minimum, in other words, on a skimmed milk day. Retained nitrogen and salts are thus excreted by the bowels and kidneys, and the patient starts the week in a sanitary way, even though his kidneys are imperfect.

7. Besides laxatives and iron, when indicated, as little medication as possible should be given in chronic nephritis. The various measures suggested for the control of this disease will for a long time preclude the necessity for using drugs. If a hypnotic must be given for a short time, bromids or chloral should be selected on account of the usual high blood pressure. The synthetic hypnotics should ordinarily not be used, although an occasional dose of veronal-sodium or luminal may be employed. In high blood pressure nitroglycerin at night frequently induces sleep.

If the blood pressure is not kept down by physical methods, diet, etc., nitroglycerin, in a dose of $\frac{1}{200}$ to $\frac{1}{100}$ grain, three, four or five times a day, as found necessary, will almost invariably lower the blood pressure, unless the patient is uremic. If the patient is obese, especially if the skin is dry, the heart slow and the blood pressure high, 1, 2 or 3 grains of thyroid, given each morning, will prove beneficial, the dose depending on its effect on the patient. If it causes nervousness, sleeplessness or rapid heart, the use of the drug should be discontinued. Its purpose is to prevent the addition of weight, to lower the blood pressure, to stimulate the skin, and to aid in the detoxication of retained products of nitrogen metabolism. In nephritis occurring at the time of the menopause in women with signs of subsecretion of the thyroid, thyroid medication is very beneficial.

If the patient has no appetite, some simple bitter tonic may be given before meals; or, 1 grain of quinin sulphate may be given in capsule three times a day, with or without 1 grain of reduced iron.

If any coincident condition occurs in a patient with chronic nephritis, it must be treated as usual, with the exception of greater care in regard to the use of drugs. Any drug known to irritate or injure the kidneys should not be given. Iodids should ordinarily not be prescribed; arsenic usually is harmful; phenyl salicylate or any other salicylate is inadvisable. Codein may be used to alleviate pain, and morphin if the pain is severe; but one must always be extremely careful in the use of narcotics in chronic nephritis. Coal-tar products should be given only in very small doses. Digitalis, if used, should be given in small doses and with great care. In cardiac insufficiency it may be of great benefit; but if the kidneys are much impaired it may do great harm. Caffein in any form may act as a temporary diuretic, but it is liable to cause, secondarily, diminished secretion of the kidneys. It should not be given in high blood pressure, but may be used in acute cardiac failure.

The treatment of cardiovascular-renal disease has already been described.[107]

One is seldom justified in giving a so-called diuretic in chronic nephritis. It is inadvisable to stimulate an impaired organ, but if alkalies are indicated, potassium citrate may increase the output of urine, temporarily at least. Theobromin sodium salicylate is one of the least irritating of the caffein group, but often proves unsatisfactory in reducing edema or in increasing the output of urine.

Christian[108] has shown that theocin has no constant diuretic action. It may or may not cause slight diuresis when a patient has no edema. It generally causes diuresis in cardiovascular-renal disease with edema, and also increases the sodium chlorid excretion. The nitrogen execretion is much less increased, for even when diuresis is caused, Christian finds that the kidneys may later show a decrease in nitrogen excretion, or a kidney tire; therefore, the only condition in which to use theocin, one of the strongest of the newer so-called diuretics, is in cardiovascular-renal dropsy, when it should be used only intermittently and perhaps in conjunction with digitalis.

Large doses of thyroid extract may prevent convulsions and may aid in saving the life of a patient suffering with uremia from acute nephritis or with puerperal eclampsia.

There is no doubt that in the majority of cases the proper management of chronic nephritis will prolong the patient's life by months, and perhaps years. Partial uremic attacks may occur during the course of chronic nephritis, and by proper measures the patient's life may be saved. Some patients survive several attacks, but sooner or later a fatal uremia will occur, unless the patient dies of heart failure, apoplexy or some other disease or complication of diseases. The prognosis of uremia occurring in chronic nephritis, if the attack is severe, is less favorable than that of uremia occurring in acute nephritis. The treatment is that described under uremia. The value of decapsulation and the indication for it in chronic nephritis will be described under that heading.

Although the urine of a chronic nephritis patient should occasionally be analyzed, it should not be analyzed so frequently as to cause continuous mental worry. There is no reason why the chronic nephritis patient, like the patient with chronic heart weakness, should not live for years, if properly watched; but, as in heart disease, it is necessary to divert the patient's attention from himself, while we are giving him a more or less frequent supervision (depending on his condition).

(To be continued)

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[107] Cardiovascular-Renal Disease, Therapeutics, The Journal A. M. A., Sept. 23, 1916, p. 951.

[108] Christian, Henry A.: Some Studies of a Diuretic (Theocin), Arch. Int. Med., November, 1916, p. 606.

Special Article

THE MEDICAL OFFICER OF THE ARMY

II

SANITARY SERVICE IN THE FIELD

The sanitary service of the army in the field is divided into two sections: one for the zone of the advance, which comprises all of that territory covered by the army in actual operation, the other for service in the zone of the line of communications, which covers all that territory between the base and the zone of the advance. This zone of the line of communications is concerned particularly with the service of the supply and the care and evacuation of the sick and wounded. In the zone of the advance the mobile sanitary units are located. With each division there are four ambulance companies and four field hospital companies. These units are intended for service on the actual field of battle. Their work is thoroughly organized and proceeds under plans worked out beforehand. The general principles of this work with the army in the field were first originated and developed by Surgeon Jonathan Letterman, who was the medical director for General McClellan's army during the Civil War. His plans, after having been adopted by General McClellan, finally received the approval of Congress and were adopted for all of the federal armies then operating. Though the foreign nations followed closely our lead in this subject, our own country after the Civil War did not take to heart the lessons it had learned; therefore, when the Spanish-American War began, there was no such organizations as mobile sanitary units in our army. A more or less inadequate plan was then adopted by providing regimental hospitals with each regiment. Experience showed this scheme to be useless, and the present plans now in effect were adopted. Since the Russo-Japanese War these have been more completely developed, and at the present time are similar to the regulations in force in the large European armies.

There is great necessity for thoroughly trained officers and men in this service; every effort, therefore, has been made by the medical department to train these men in time of peace. Unfortunately, the secretary of war has never allowed a sufficient number of units for even our small regular army, so that in time of actual war we shall have to organize this service carefully for any large army called out by the president.

AMBULANCE COMPANIES

There are four ambulance companies to each division under the control of an officer designated as the director of ambulance companies. The personnel of each ambulance company consists of five medical officers and seventy-nine enlisted men: twelve ambulances and three wagons are provided for transportation of supplies.

REGIMENTAL AID

When the regiment goes into action, the immediate first aid is done so far as possible by the sanitary detachments belonging to each regiment. They, of course, have to accompany the regiment when it makes a further advance, and the work of applying first aid and evacuating the wounded is taken up by the ambulance company.

DRESSING STATIONS

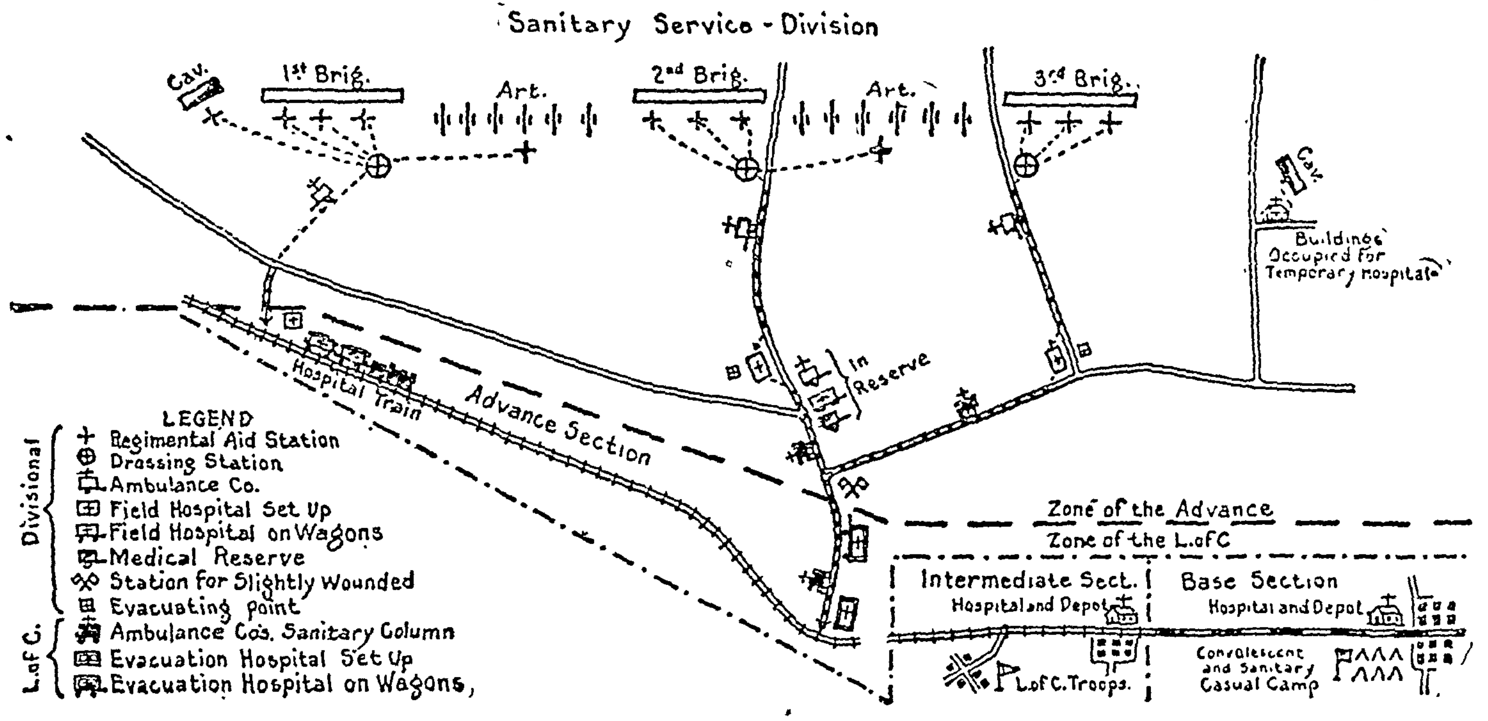
On being notified by the division surgeon who is in command of the sanitary units of the division that a dressing station should be established in a certain sector of the field, the director of ambulance companies sends a company to take up that work. It should be understood that the ambulance companies of the division are not allotted to certain parts of that division; but when the casualties are occurring in sufficient degree to require the services of an ambulance company, one is immediately sent, a reserve of one or more companies being kept as long as possible in a position of readiness to go forward in case of any emergency. This method always provides for the more flexible handling of the service. When the ambulance company arrives at the point at which a dressing station is to be established, one section immediately takes steps to establish this station, and the bearer sections of the company go forward to the field of battle to begin the transportation of the wounded back to the station. This transportation is by litter, or if there is a lull in the engagement or the battle is over, ambulances are brought directly to the field. As rapidly as possible the wounded are removed to the dressing stations, and thence as soon as the field has been entirely cleared they are taken to the field hospitals located farther to the rear. Much of this work may have to be done at night. It is impossible to remove the wounded under fire, as there is the great probability of losing more sanitary troops than wounded men. This dressing station is not permanent in character; it is a collecting point for the wounded selected on account of the protection provided from rifle fire. Here the wounded receive first aid, and only such emergency operations as the ligation of arteries, etc., are attempted. There is no tentage and no elaborate equipment.

FIELD HOSPITALS

The next step is taken up by the field hospitals. There are four such units to a division under the control of a director of field hospitals, and each field hospital company has a personnel of six medical officers and sixty-seven enlisted men; their material is carried in seven wagons. As soon as notified that a field hospital should be established, one company is sent forward and immediately opens the hospital at the point selected. If possible, buildings are used in some town or village; but if this is impracticable, tents are erected, each field hospital having by this means accommodations for 216 patients. As soon as established, the wounded are rapidly transported from the dressing stations to these field hospitals by the ambulances of the ambulance company. When the injured arrive at the field hospital they receive a little more attention than could be given them on the field itself. In this regard it must be understood that the name "field hospital" is somewhat a misnomer. No real hospital treatment is attempted, and this station is only a point at which the wounded men receive temporary treatment. All wounds needing extensive dressings or redressings are attended to at once, emergency operations performed, and the wounded men are made comfortable on bed sacks filled with straw. Liquid food is also provided not only for nourishment but also for its stimulating properties. With an army moving rapidly in campaign, no extensive operations can be indulged in at the field hospital. The greatest good for the greatest number must be always uppermost in the minds of all officers attached to such a unit. This principle of not performing extensive operations on the field is somewhat at variance with the practices of some of the armies of the European nations during the present war, but the warfare on the western front has been trench warfare, or siege warfare, as it is technically called, and the field hospitals have been more or less permanently established for over two years past. This permits them to provide for the care and treatment of serious as well as of slight cases directly behind the firing line.

EVACUATION SERVICE

As soon as the field hospitals begin to receive their wounded, plans must be perfected for their further evacuation to hospitals in the rear. This evacuation service is organized as thoroughly as possible, and at this point Red Cross columns can be profitably used. The magnitude of the problem of the care and evacuation of the wounded on the battlefield is one that can hardly be exaggerated. It is absolutely necessary to remove the wounded as rapidly as possible, not only for the purpose of clearing the division of the impediment caused by the large numbers of the disabled, but also to prevent the sight of seriously wounded men affecting the morale of the troops. After an engagement, the army is possibly advancing farther with prospects of future fighting; therefore, its ambulance companies and field hospitals have to evacuate their wounded rapidly so that they, too, may move forward if necessary and be of service in any future engagement.



The motorization of the mobile sanitary units has received careful attention in our service since the development of that method of transportation during the present European war. The service is being rapidly equipped with well designed ambulances, and men are being trained to handle them. It is not the intention of the medical department to use motor ambulances to the exclusion of the mule ambulance, as it is realized that the roads in this country will at times not permit of the movement of motor vehicles, so that not all of the four ambulance companies with the division are to be supplied with these vehicles, one or two of these companies remaining equipped with the mule-drawn vehicles.

LINE OF COMMUNICATIONS

The line of communications is under the command of the commander of the line of communications, who is under the commander of the armies in the field. The technical adviser representing the medical department on the staff of the commander of the line of communications is called the surgeon of the base group, and this officer is located at the base. All of the medical service of the line of communications is in his hands, but a line of communications is anywhere from 50 to 300 miles in length, and naturally an officer stationed at the base is rather out of touch with what occurs at the other end of this line. Therefore, another position has been created, and an officer is detailed as surgeon of the advance group of the line of communications. This officer is in charge of the care and evacuation of the wounded from the time they leave the field hospital up to the time they are placed on the hospital train for further evacuation to the base. From the medical standpoint, the head of the line of communications is a very important point. It acts as a safety valve in the evacuation of the sick and wounded. The division is bending every effort to free itself of the impediment of the sick and wounded after an engagement of any moment, and the railroads which are the principal arteries of the line of communication are congested with trains bringing ammunition and other supplies to the front. This then prevents the commencement of the evacuation of the wounded from the head of the line of communications to the base. Considering the question from this standpoint, it can be seen that the hospitals and other units located at this end of the line of communication must be rapidly expansible. The unit particularly concerned in this work is the evacuation hospital. There are two such hospitals allotted to each division. Each hospital has a personnel of fourteen officers and 153 enlisted men. The entire capacity is 432 beds, but there are sufficient supplies on hand to provide for an expansion to a much greater extent. An evacuation hospital is preferably located in buildings selected for the purpose in a town or city which is the head of the line of communications. Tentage is provided, but should not be used except in cases of emergency. Of course, it would be preferable to move the evacuation hospital up to the point at which field hospitals are located so that they can relieve these field hospitals at this point and eliminate the transportation of the wounded from the field hospital to the evacuation hospital. This unfortunately will be found to be impossible in most cases, and the plans for the evacuation from the field hospital to the evacuation hospital must then be perfected. An evacuation hospital is the first place where real hospital care can be provided for the wounded men and where they can receive every medical attention. The equipment furnished is sufficiently elaborate to give complete hospital care to every wounded man retained at this point.

EVACUATION HOSPITAL

The wounded received at an evacuation hospital can be divided into three categories: 1. Those men who are so seriously wounded that they cannot stand further transportation; these will have to remain at the hospital indefinitely. 2. Seriously wounded men who can stand such transportation; this class is to be evacuated to the base at the earliest practicable moment. 3. Slightly wounded men who will recover within a week or ten days. It is naturally improper to send these men farther to the rear, for they will shortly be able to rejoin their regiments; but it is also wrong to allow the beds of an evacuation hospital to be filled by men who do not need hospital attention. Therefore, they are not accommodated in the evacuation hospital itself but in a convalescent camp under control of the medical department. There they receive food and shelter and such medical attention as they require until they have thoroughly recovered, and they are then turned over to the line officers to be sent forward to the zone of the advance. The evacuation from the head of the line of communication to the base is accomplished by means of hospital trains. These trains will be practically rolling hospitals, and every care and attention will be given the sick and wounded on their journey. Unfortunately, we have only one such train in our service, and it is probable that even if other hospital trains are equipped, a good deal of the transportation directly after an engagement when the wounded are to be evacuated in large numbers will be carried on in improvised hospital trains. These will be trains of Pullman or passenger coaches arranged for the purpose, or even box cars with sufficient straw spread on the floor to give a certain amount of comfort to the wounded men. When these wounded arrive at the base they are then removed from the trains to the base hospitals.

BASE HOSPITAL

Base hospitals are established in buildings either adapted from buildings formerly used for other purposes or in especially constructed temporary structures. Each base hospital has a capacity of 500 beds and a personnel of twenty officers, 153 enlisted men and forty-six female nurses. There are sufficient supplies on hand with each base hospital to provide for an expansion to at least double this number. The base hospital as equipped gives complete hospital attention to all sick and wounded received. The officer in command of a base hospital should be thoroughly familiar with his duties and see not only that the patients receive careful attention but also that wounded men who are expected to recover shortly are not permitted to go farther to the rear. Further evacuation should include only the totally disabled or those who are probably disabled for some time to come. This principle of procedure must be thoroughly understood, for we are constantly endeavoring during active campaign to keep as many men with the colors as possible, and naturally if wounded men go farther to the rear than the base hospitals, a great deal more difficulty will be experienced in providing for their return to the firing line. A convalescent camp is also established at the base and all men who have recovered suffciently so as not to require hospital attention are placed in the camp until they are able to do full duty, when they are returned to their regiments.

MEDICAL SUPPLY DEPARTMENT

Another important service with the army in the field is conducted by the medical supply department whose principal station is established at the base. There supplies are received from the rear for distribution to the division units and also the hospitals located along the line of communications. A branch of this depot is established at the head of the line of communications to facilitate the resupply of the mobile units. The field hospital has on hand a reserve supply of all the material needed by ambulance companies and regimental detachments, and can resupply these units.

New and Nonofficial Remedies

The following additional article has been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.
W. A. Puckner, Secretary.

ACETYLSALICYLIC ACID (See N. N. R., 1917, p. 265).

Acetylsalicylic Acid, Squibb.—A nonproprietary brand complying with the standards for acetylsalicylic acid.

Manufactured by E. R. Squibb and Sons, New York City.

Aspirin, L. & F.—A nonproprietary brand complying with the standards for acetylsalicylic acid.

Manufactured by Lehn and Fink, New York City.

Malaria in Peru.—Under a law passed, Dec. 22, 1916, the Peruvian government has begun an active campaign against malaria (*Commerce Reports,* Feb. 26, 1917), which will include the treatment of patients, the protection of people living in places in which malaria is endemic, the destruction of mosquitoes and the drainage or special treatment of swamp lands. The government will import quinin, free of customs and port charges, and individuals and institutions may purchase the drug at cost. All proprietors of estates, all railways, corporations and other organizations employing labor will be required to furnish medical service to their employees, either directly or through proportionate contributions to charitable dispensaries, and inspectors will be appointed to see that the work is carried out. Unemployed persons will receive free quinin. Houses in swampy districts will be provided with mosquito netting, and rice or other crops requiring flooding will not be cultivated within a certain distance of habitations. Drainage will be begun by the government, and all private owners will be given from one to four years to complete the sanitation of their lands. Where drainage is impracticable, swamps will be treated with crude petroleum. Prizes will be offered by the government to those who show most zeal in putting their lands in good condition. A course of study in the prevention of malaria is to be given in all public and private schools. The instruction will be in charge of the department of public health, and the expense will be met by annual appropriations in the budget.

to such a unit. This principle of not performing extensive operations on the field is somewhat at variance with the practices of some of the armies of the European nations during the present war, but the warfare on the western front has been trench warfare, or siege warfare, as it is technically called, and the field hospitals have been more or less permanently established for over two years past. This permits them to provide for the care and treatment of serious as well as of slight cases directly behind the firing line.

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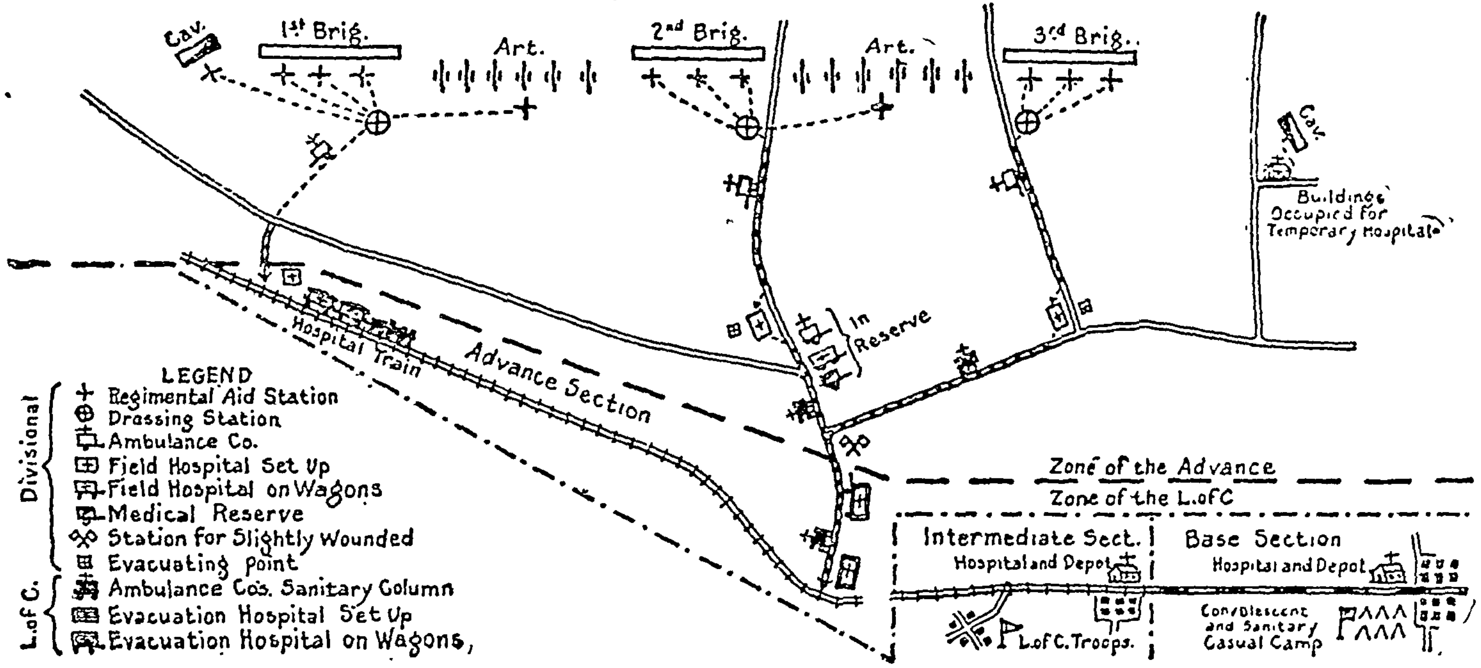
Sanitary Service - Division



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ICE CREAM AND BACTERIA

The use of artificially frozen food materials, such as ice cream, as articles of diet is comparatively recent. In the United States the value of the annual output of ice cream exceeds $100,000,000, and is apparently steadily increasing. The popularity of ice cream is partly due to the fact that it is one of the few foods "which can be procured ready-made, requires no preparation, no labor, no time, no fuel cost, and can be served freely and often." In addition to other places where it is sold, many of the nearly 50,000 drug stores in this country dispense it.

Strictly speaking, ice cream is a frozen product made from cream and sugar with or without a natural flavoring, and should contain about 14 per cent. of milk fat. There is as yet no general agreement as to whether or not and to what extent such ingredients as starch, flour, eggs, gelatin and gums should be permitted. The hygienic quality of ice cream obviously depends on the sanitary character of its ingredients, particularly on that of the cream. Many persons believe that the freezing temperature suffices to destroy many of the bacteria present, thus making ice cream sanitary. This is, however, far from the truth. Several years ago Dr. Pennington and her collaborators[1] showed that during the maintenance at 0 C. (32 F.) the organisms of raw untreated and reinfected sterile milk and cream undergo an increase, which is most striking in the raw untreated milk. Some organisms disappear during this period; others become acclimated to the lower temperatures of incubation. Ice cream, however, attains a lower temperature; yet studies at the Storrs (Conn.) Agricultural Experiment Station[2] have shown that when ice cream is kept frozen for at least a month there is no marked increase or decrease in the bacterial content. This indicates that ice cream with a high bacterial content at the start may be expected to show large numbers of bacteria throughout the period of storage, while ice cream with a low bacterial count will continue to show only a few micro-organisms.

The important feature to be emphasized, therefore, is the fact that the condition of the ingredients of the ice cream, rather than the period of its storage, determines its quality from a bacteriologic standpoint. In one of the most elaborate reports ever made on the subject, Wiley[3] pointed out, in 1908, that the bacteriologic examination of cream and ice cream in the District of Columbia showed that much of it contained bacteria far in excess of the number which should be found in pure, uncontaminated fresh products. In 263 samples of ice cream collected in the city of Washington in 1906-1907, the average number of organisms per cubic centimeter was over 26 millions, with a maximum count of 365 millions and a minimum of 137 thousand. This enormous bacterial flora was ascribed to two causes, namely, insanitary conditions of the dairy and factory, and long preservation of the product.

With the progress of popular education in hygiene of the milk and dairy industry, advances are continually made. These advances have, however, seemingly as yet little affected the sanitary condition of ice cream ordinarily sold at retail stores. Available statistics for Philadelphia, Boston, Washington, Chicago, and Des Moines and Ames, Iowa, indicate that on an average from 15 to 26 millions of bacteria per cubic centimeter are found in the ice cream sold in these cities. Later data obtained from products purchased at retail in three localities in Connecticut give little, if any, evidence of better conditions in that state, the figures ranging from 1 to 42 millions, with an average of 15 millions.[2] Is it unfair to say that better standards should be maintained in this industry, which has heretofore often escaped suspicion because of a mistaken prevalent belief in the bactericidal effect of cold?

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[1] Pennington, M. E.; Hepburn, J. S.; St. John, E. Q.; Witmer, E.; Stafford, M. O., and Burrell, J. I.: Bacterial and Enzymic Changes in Milk and Cream at 0° C., Jour. Biol. Chem., 1913-1914, **16**, 331.

[2] Esten, W. M., and Mason, C. J.: The Bacteria in Ice Cream, Bull. 83, Storrs Agricultural Experiment Station, p. 128, 1915.

[3] Wiley, H. W.: Ice Cream, in Milk and Its Relation to the Public Health, Bull. Hyg. Lab., U. S. P. H. S., 1908, **41**, 245.

COLOSTRAL MILK

Colostrum, the product secreted by the mammary gland for a short period after the birth of young in the lactating individual, varies in its composition. Judged by the fact that naturally fed infants and calves each receive the colostrum of their own species, the value of this product to the young of the same species might be adjudged to be considerable. But the colostrum of the cow is not a marketable product, and we are not aware of any record of its having been supplied to infants as food. Opinions as to the length of time after parturition during which cow's milk is unfit for human consumption differ. The methods and standards for certified milk adopted by the American Association of Medical Milk Commissions[1] place the figure at seven days after parturition.

The basis for the exclusion of cow's milk immediately after the birth of the calf is that its composition or constituents give rise to intestinal disorders. Eckles and Palmer[2] of the Missouri Agricultural Experiment Station, who have devoted much study to the milk question, state that the evidence on which this conclusion is based is extremely difficult to find. The literature on colostrum milk is extensive, but it is astonishingly free from specific data regarding the

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[1] Proc. Sixth Ann. Conference, Am. Assn. Med. Milk Commissions, 1912, p. 124.

[2] Eckles, C. H., and Palmer, L. S.: The Influence of Parturition on the Composition and Properties of the Milk and Milk Fat of the Cow, Jour. Biol. Chem., 1916, **27**, 313.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, APRIL 28, 1917

THE FOOD SUPPLY

If the American people fail to appreciate the supreme importance of the food supply in relation to the present world war and the inevitable consequences which are liable to confront our own nation, now at war, if the food problem is treated with characteristic American indifference, it will scarcely be the fault of printers' ink or inadequate publicity. The lessons of the distressing European situation in respect to the shortage of food among both belligerents and neutrals will have been taught in vain if this country remains blind to the dangers of either ignorance or unconcern in this matter. A proposed war loan of seven billions of dollars has awakened the public to an attempt to realize what this sum really means and how it may affect our people. A figure so stupendous is not easily grasped by the average person. The foremost experts of the country have given time and earnest thought to the questions involved in the collection and expenditure of this contribution to the war. Yet, as recently remarked by an expert in nutrition, the food problem involves a national expenditure of at least six thousand million — six billion — dollars per year. The food problem is a national problem which affects the living expenses of the very poor more directly than does any other problem.

Despite these eminently impressive facts, the person who ventures to revert to the pressing questions of food and nutrition is still looked on all too frequently as either a "highbrow" or a crank. The day has passed when the people of any community of noteworthy size are allowed to suffer the consequences of an inadequate or impure water supply or are obliged to submit to the inconveniences of mismanaged public service institutions. Nevertheless the food supply on which every inhabitant is absolutely dependent is almost entirely removed from any regulatory influences, other than a few sanitary regulations here and there.

Has not the time arrived for some progressive step, particularly in view of the prominence which the war situation has given to the problems of food supply? Action does not necessarily mean restrictive legislation or obnoxious police regulations or direct interference with that freedom of choice which the American citizen is sometimes urged to love too well to abuse it. Progress may often be initiated by education; it is even enforced by competition. In an illuminating address on food values delivered a few days ago in New York before the Home Economics Association and the Society of Chemical Industry, Lusk[1] referred to the experiences which Germany encountered as the result of her attitude early during the war toward the advice of the students of nutrition. It was unfortunate, he says, that the carrying out of the recommendations of the Eltzbacher Commission was left to politicians, farmers and middlemen. The scientists of the country were not represented, and the result was chaos. It may appear a contradiction of terms, Lusk adds, to hear in the same breath that there is a shortage of food in Germany and yet that the people are not starving. This is due to the fact that in extreme cases of undernutrition it is possible to reduce the requirement of food to only 40 per cent. of its former level. The undernourished and emaciated may, therefore, live on much less food than those who are well fed and are up to normal weight.

In England a scientific commission composed of men whose names should bear weight has already concerned itself with British food conditions so that the restrictions of the food controller may be put on some rational basis of nutritive safety. It is recognized everywhere among those trained in the domain of nutrition that a hard-working man requires more food than one who is not so strenuously engaged. Accordingly the British troops in the field are reported to receive from 4,300 to 4,600 calories because they are subjected to severe muscular tasks and are much exposed to cold. Yet, according to Lusk, "Dr. Murlin has calculated that the 'garrison ration' of the United States Army contains 4,400 calories, while the 'field ration' contains only 3,800."

What scientific advice is at present worth giving and how to give it is a question for experts to decide. The past three years have exemplified the validity of this thesis. The question of food supply is one not merely of human nutrition. Available food energy must be distributed between man and beast in the most productive and economical way. Problems of quality as well as quantity are concerned, as was recently pointed out in relation to the need of fats.[2] Lusk has seriously suggested that this is the proper time for an American commission to consider these subjects and report to our government what elemental advice the commission might agree to give. The personnel of an appropriate committee has even been proposed, namely, Mendel, Taylor, McCollum, Folin, Levene, Sherman, Armsby, Langworthy and Benedict. Dr. Lusk's modesty, of course, prevented the suggestion of his own of working-age. The German figures for 1913 give 8.8 days for males and 9.8 days for females insured in the sickness societies of that country.[3]

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[1] Lusk, Graham: Food Values; Science, April 13, 1917, p. 315.

[2] The Need and Availability of Fats, editorial, The Journal A. M. A., April 14, 1917, p. 1124.

If from 2.5 to 3 per cent. of the working population are constantly sick, this is equivalent to a loss of about nine working days per person per year of 300 working days for the entire population. This rate applied to the whole country gives figures that are staggering. No monetary estimates of disability are needed to emphasize this enormous loss of working time in the productive years of life. Whatever the financial estimate based on wage loss, we have still to consider the cost of medical attendance, nursing care and drugs, and the far-reaching effects of sickness in impairing the living and working efficiency of the families affected by the disability of one or more members. If public health is purchasable, as Biggs has so emphatically proclaimed in his campaign for conservation in New York State, the possibilities of success from suitable investments, indicated by the now known facts regarding sickness, appear to be nothing short of enormous.

Current Comment

THE IMMEDIATE NEED OF YOUNG MEN FOR THE REGULAR MEDICAL CORPS

The Medical Corps of the Army is in immediate need of and is appealing urgently for young ambitious physicians to fill positions that have long been regarded as desirable but which have heretofore been difficult to obtain, namely, membership in the Medical Corps of the Army. The position is one of honor, it is permanent, and commands a good remuneration. It offers opportunity for those who are ambitious to make famous names for themselves. Not a little of the progress made in medicine has been the result of work by medical men of the army. There is opportunity for laboratory research and for scientific clinical investigation. The act of June 3, 1916, provided for increasing the standing army to 293,000 men, an increase of 161,000 men. This calls for a proportionate increase in the number of medical officers. After the full quota of the army is reached, 2,051 medical officers will be required. Including those in the Army Medical School and those who have offered their services and who have been accepted subject to examination, 685 medical officers are available. This leaves 1,366 additional medical officers necessary to be appointed by the time the new regular army is fully manned. How soon this will be is not known. It is dependent on how soon Congress will make the necessary appropriation and also on whether Congress will depend on the volunteer system or will adopt selective conscription to obtain the men. But no matter whether two months or six months elapse before the quota of 293,000 men is secured, there must be 2,051 medical officers ready to serve. The Surgeon General of the army is appealing for these men now. He wants them now so that they may receive the necessary training and be ready just as soon as the new regular army is ready. The Journal adds its appeal to that of the Surgeon General. Young physicians who are qualified and who consider entering into military medical work should act at once. An application blank appeared in The Journal last week. Fill it out and forward it immediately to the Surgeon General of the Army. Graduates of good medical schools under 32 years of age who are physically and mentally qualified will be thus rendering a service to their country, to medical science and to themselves.

THE NEW YORK SESSION NUMBER

The preparations for the annual session of the Association, to be held in New York City, June 4-8, are being rapidly completed. The next issue of The Journal, May 5, will be the New York number and will convey the official call for the 1917 annual session to the officers, members and Fellows. It will announce also the preliminary program of the Scientific Assembly, together with information concerning railroad rates, hotel accommodations and the scientific and social events provided by the local profession, as well as other matters which will interest those who are planning to attend this session.

MATERNAL MORTALITY IN THE UNITED STATES

It is now nearly seventy-five years since Oliver Wendell Holmes in this country and Semmelweis in Europe announced the infectious character and preventability of puerperal septicemia. Yet as nearly as can be determined from our imperfect records, about 15,000 women die annually from conditions related to childbirth. Of these, about 7,000 die from septicemia, known for three quarters of a century to be almost entirely preventable. In 1913, childbirth caused more deaths among women from 15 to 44 years of age than any other one disease except tuberculosis. Of fifteen foreign countries only two show a higher death rate from this cause than does the Registration Area of the United States. According to Meigs,[1] there were, in 1913, in the Death Registration Area of the United States, 10,010 deaths due to conditions caused by pregnancy and childbirth. Of these, 4,542 were due to puerperal septicemia. It is estimated, then, that in 1913, the total number of deaths in the United States due to childbirth was 15,376, of which 6,977 were due to childbed fever, a death rate of 15.8 per hundred thousand including all ages and both sexes, or 50.3 per hundred thousand women between 15 and 44. Owing to defective registration, no accurate comparison between urban and rural populations is possible. A definite and striking difference exists, however, between the white and colored populations. In 1913, the death rate from all diseases of pregnancy and confinement per hundred thousand white population was 15.2, and the rate from puerperal septicemia was 6.9, while the rate per hundred thousand colored population for all diseases of pregnancy was 25.1 and for puerperal septicemia 11.5. Comparing the United States with foreign countries, it is found that out of the sixteen leading countries, the United States stands fourteenth, our death rate in this field being surpassed only by Switzerland and Spain, while Sweden, with a total death rate of 6 per hundred thousand, Norway with 8.1 and Italy with 8.9 per hundred thousand stand at the head of the list. Two causes are suggested: ignorance on the part of the public of the dangers connected with childbirth and of the need of skilled care and proper hygiene to prevent them, and the difficulty of securing proper obstetric care. In spite of the fact that the preventability of puerperal septicemia was recognized long before that of any other infectious disease except smallpox, the public still regards childbirth as an entirely normal process and a certain number of deaths as unavoidable. This has reacted on the medical profession, producing low fees, so that, with the exception of the city specialist, obstetrics has become one of the worst paid, although one of the most difficult and exacting branches of medicine. When to these factors are added the additional problems of the ignorant midwife, the lack of hospital facilities and the difficulty of proper care in the home, especially in small towns and rural communities, it is not strange that the death rate from this cause not only should be disgracefully high, but also should have shown little reduction in the past decade.

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[3] Kaiserliches Statistisches Amt, Die Krankenversicherung im Jahre 1913, Statistik des Deutschen Reichs, Berlin, 1915, **277**, 60.

[1] Meigs, Grace L.: Maternal Mortality from All Conditions Connected with Childbirth in the United States and Certain Other Countries, Miscellaneous Series 6, Bureau Publication 19, Federal Children's Bureau, Department of Labor, Washington, D. C.

PLATINUM, PATRIOTISM AND LABORATORY PRACTICE

Platinum is required in the production of sulphuric acid, which is itself a necessity in the production of high explosives. Platinum is also extensively used in the timing apparatus for torpedoes and timed shells. During the past few years the price of platinum has advanced so rapidly that it is today approximately five times as valuable as gold. This advance has been due to the increased uses for this metal. It is used in lighting apparatus, it is used in laboratories, in the form of the well-known "platinum loop" for bacteriologic cultures, it is used extensively in dentistry, in photography and by some freak of fashion it is used in modern jewelry. From a purely esthetic point of view, its use in jewelry has but slight justification as it is not so beautiful as many other substances, and except for its intrinsic value, it seems to have but slight merit as an adornment. In the same way, its use in the laboratory, in dentistry and in photography may be overcome by the substitution of other less valuable metals. The great need of the metal in the processes mentioned which bear such a direct relationship to the war, and in which no other metal can be substituted for platinum, should cause the patriotic physician and the dentist to dispense with it wholly as an adornment and in the laboratory whenever possible.

THE COMPOSITION OF HUMAN MILK IN THE EARLY DAYS OF LACTATION

Precisely when and how rapidly the change from colostrum, secreted by the mammary gland just after parturition, to the subsequent true milk occurs is not clear in the case of the human species. Colostrum is characterized by a comparative richness in proteins, whereas the sugar and salt content does not differ so widely from that of the milk secreted later. A variety of properties, such as a laxative effect, have been attributed to colostrum; but information regarding the chemical make-up of mother's milk in the earlier stage of lactation is far from complete. There are numerous factors, such as constitution, age, diet and disease, in addition to the stage of lactation, which may play some part in affecting its composition. Statistics from human sources under carefully controlled conditions are not readily obtainable. Special value attaches, therefore, to a new series of analyses by Hammett.[1] Milk was collected from healthy women by means of the breast pump at the same hour on the third, fifth, seventh, ninth and eleventh days after parturition. Quantitatively, fat and lactose were found to be increased in amount during the period studied, while there was a falling off in the production of protein. If we accept as an index of variability the individual variation from the group average, and the individual variation from day to day, the three constituents fall into the following order of decreasing variability: fat, protein, lactose. The protein-producing mechanism is apparently the best regulated, and is less dependent on the factors controlling the fat and lactose production than they are on each other. For the single constituents there is a production plane uniform for the individual subject. This plane of production is fixed for the individual, independent of the plane of nutrition and dependent on the individuality. An increase or decrease in the lactose production is generally accompanied by a change in the opposite direction in the percentage of fat and protein.

MEDICAL AND PREMEDICAL STUDENTS

If there is any single group of young men who are patriotic and who want to show it, it is the young men in our universities and medical schools. However, may we suggest to these young men that they can show their patriotism and do more for their country by completing their education than by volunteering as soldiers in the ranks. The General Medical Board of the Council of National Defense has taken action on this matter and is appealing[2] to medical and premedical students to continue in their original idea of educating themselves for the medical profession. It will take moral courage in some instances, especially if classmates are volunteering, but this kind of courage is just as commendable as that required to shoulder a musket and enter the trenches.

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1. Hammett, F. S.: Variations in the Composition of Human Milk During the First Eleven Days after Parturition, Jour. Biol. Chem., 1917, **29**, 381.
2. See Medical Mobilization and the War, this issue, p. 1267.

Medical Mobilization and the War

APPLICATION FOR THE MEDICAL OFFICERS RESERVE CORPS

Last week we published two application blanks, one for the Medical Corps and the other for the Medical Officers Reserve Corps. At that time we stated that when filled out the blanks should be sent to the surgeon-general's office. This applies only to applications for the regular Medical Corps. The surgeon-general's office has appointed medical boards in various parts of the country, composed of officers of the Medical Reserve Corps, to pass on applicants for the Medical Officers Reserve Corps. This will relieve the pressure on the surgeon-general's office, and make it more convenient for those who offer their services. We give below the chairmen of the various boards. Applicants for the Medical Officers Reserve Corps should send their applications to the chairman of the nearest board.

Albany, N. Y.—1st Lieut. Henry L. K. Shaw, M. R. C., 361 State St., Pres.
St. Louis—1st Lieut. William H. Luedde, M. R. C., 311 Metropolitan Bldg., Pres.
New York—1st Lieut. Henry C. Coe, M. R. C., 40 East 41st St., Pres.
Chicago—1st Lieut. John A. Hornsby, M. R. C., 6 N. Michigan Ave., Pres.
Denver—1st Lieut. Cuthbert Powell, M. R. C., Metropolitan Bldg., Pres.
Minneapolis—1st Lieut. James F. Corbett, M. R. C., 4401 East Lake Harriett Blvd., Pres.
Ann Arbor, Mich.—1st Lieut. Reuben Peterson, M. R. C., 1416 Hill St.
Cincinnati—1st Lieut. Robert D. Maddox, M.R.C., 4 W. 7th St., Pres.
Pittsburgh—1st Lieut. John W. Boyce, M. R. C., Empire Bldg., Pres.
Richmond, Va.—1st Lieut. Stuart McGuire, M. R. C., 513 E. Grace St., Pres.
Boston—1st Lieut. Horace D. Arnold, M. R. C., Harvard University Graduate School of Medicine, Pres.
New Orleans—1st Lieut. Isadore Dyer, M. R. C., 124 Baronne St., Pres.
Philadelphia—1st Lieut. Elijah H. Siter, M. R. C., 1818 S. Rittenhouse Sq., Pres.
Cleveland—1st Lieut. George W. Crile, M. R. C., 1021 Prospect Ave., S. E.
Milwaukee, Wis.—Dr. G. V. I. Brown, 349 Prospect Ave., Pres.
Detroit—1st Lieut. Angus McLean, M. R. C., David Whitney Bldg.
Marquette, Mich.—1st Lieut. A. W. Hornbogen, M. R. C.
Fort Sill, Okla.—1st Lieut. Herbert C. Woolley, M. R. C.
Springfield, Mass.—1st Lieut. Charles F. Lynch, M. R. C., 387 Main St., Pres.
Los Angeles—1st Lieut. John J. Kyle, M. R. C., 702 Title Ins. Bldg.
Oklahoma—1st Lieut. Rex G. Bolend, M. R. C., 1524 West 29th St.
Rochester, N. Y.—1st Lieut. John M. Swan, M. R. C., 457 Park Ave.
Fort Ethan Allen, Vt.—1st Lieut. Isaac W. Brewer, M. R. C.
Fort Moultrie, S. C.—1st Lieut. William A. Smith, M. R. C.
Meridian, Miss.—1st Lieut. I. W. Cooper, M. R. C.
Reno, Nev.—1st Lieut. Raymond St. Clair, M. R. C., Nixon Bldg.
Bismarck, N. D.—1st Lieut. Albert M. Fisher, M. R. C.
Charleston, W. Va.—1st Lieut. John E. Cannaday, M. R. C., Capital City Bank Bldg.
Fort Crocket, Texas—1st Lieut. James G. Flynn, M. R. C.
Dallas, Texas—1st Lieut. Edgar W. Loomis, M. R. C., 236 Page Ave.
Dothan, Ala.—1st Lieut. Percy O. Chaudron, M. R. C.
Staunton, Va.—1st Lieut. Wilbur M. Phelps, M. R. C.
Harrisburg, Pa.—1st Lieut. Benjamin F. Royer, M. R. C., Donaldson Apartments.
Jacksonville, Fla.—1st Lieut. Graham E. Henson, M. R. C., St. James Bldg.
Fort Barrancas, Fla.—1st Lieut. Clinton W. D'Alemberte, M. R. C.
Tampa, Fla.—1st Lieut. Earle H. McRae, M. R. C., American Bank Bldg.
Vancouver Barracks, Wash.—1st Lieut. Charles E. B. Flagg, M. R. C.
Fort George Wright, Wash.—1st Lieut. Charles E. Butts, M. R. C.
Helena, Mont.—1st Lieut. William C. Riddell, M. R. C., 504 Dearborn Ave.
Indianapolis—1st Lieut. T. Victor Keene, M. R. C., Hume Mansur Bldg.
Greensboro, N. C.—1st Lieut. John W. Long, M. R. C., 119 Church St.
Augusta, Ga.—Dr. Theodore E. Oertel, 638 Greene St.
Baltimore—Dr. John S. Davis, 1200 Cathedral St.
Portland, Maine—Dr. William L. Cousins, 231 Woodford St.
Fort Des Moines, Iowa—1st Lieut. James E. Kessell, M. R. C.
Newark, N. J.—1st Lieut. David A. Kraker, M. R. C., 236 Broad St.
Seattle—1st Lieut. Ira C. Brown, M. R. C., 901 7th Ave.
Fort Caswell, N. C.—1st Lieut. Walter A. Newman, M. R. C., Southport, N. C.
New Haven, Conn.—1st Lieut. J. W. Churchman, M. R. C., 59 College St.
Fort Screven, Ga.—1st Lieut. Harry Rubin, M. R. C.
Fort Snelling, Minn.—1st Lieut. Alexander R. Colvin, M. R. C.
Washington, D. C.—1st Lieut. Abram B. Hooe, M. R. C., 1220 16th St. N.W., Pres.

The following officers of the regular Medical Corps also have been instructed to receive applications for the Medical Officers Reserve Corps:

Chicago—Major William N. Bispham, Med. Corps.
Philadelphia—Lieut. Col. Henry Page, Med. Corps, Aldine Hotel.
Fort Sam Houston, Texas—Lieut. Col. M. W. Ireland, Med. Corps.
Fort Crockett, Texas—Capt. Robert C. McDonald, Med. Corps.
Jefferson Barracks, Mo.—Major Henry F. Pipes, Med. Corps.
  Capt. Frank N. Chilton, Med. Corps.
Fort Leavenworth, Kan.—Major Kent Nelson, Med. Corps.
  Capt. Ernest R. Gentry, Med. Corps.
Fort Logan, Colo.—Capt. John A. Burkett, Med. Corps.
Omaha—Col. John M. Bannister, U. S. A., Ret., 400 Brandeis-Theater Bldg.
Fort Oglethorpe, Ga.—Major Charles F. Morse, Med. Corps.
Fort Monroe, Va.—Major William L. Little, Med. Corps.
Fort Banks, Mass.—Lieut. Col. Weston P. Chamberlain, Med. Corps.
Syracuse, N. Y.—Major James I. Mabee, Med. Corps, 309 Orange St.
Fort Moultrie, S. C.—Major George F. Juenamann, Med. Corps.
Hot Springs, Ark.—Major Thomas L. Rhodes, Med. Corps, Army and Navy Gen. Hosp.
  Capt. A. P. Clarke, Med. Corps, Army and Navy Gen. Hosp.
Fort Wayne, Mich.—Major James Bourke, Med. Corps.
Boise, Idaho—Lieut. Col. Marshall W. Wood, U. S. A., Ret.
Buffalo—Major W. W. Quinton, U. S. A., Ret., 232 Elmwood Ave.
Coronado, Colo.—Major William L. Kneedler, U. S. A., Ret.
Fort Snelling, Minn.—Major Guy V. Rukke, Med. Corps.
Fort Williams, Maine—1st Lieut. Henry F. Lincoln, Med. Corps.
Louisville, Ky.—Capt. N. L. McDiarmid, Med. Corps, Univ. of Louisville Medical College.
Jackson Barracks, La.—Capt. T. C. Austin, Med. Corps.
Columbus Barracks, Ohio—Col. Charles Willcox, Med. Corps.
  Major H. L. Gilchrist, Med. Corps.
San Francisco—Col. Guy L. Edie, Med. Corps, Letterman Gen. Hosp.
  Lieut. Col. Charles Lynch, Med. Corps, Hdqutrs. West. Dept.
Fort Benjamin Harrison, Ind.—Capt. John R. McKnight, Med. Corps.
Fort Howard, Md.—Capt. Taylor E. Darby,
Washington, D. C.—Col. L. A. LaGarde, Med. Corps, 2624 Woodley Place N.W.
  Lieut. Col. C. C. McCullouch, Med. Corps.
  Lieut. Col. W. H. Arthur, Med. Corps.
  Major W. D. Webb, Med. Corps, 1803 Connecticut Ave. N.W.
Fort McPherson, Ga.—Lieut. Col. Thomas S. Bratton, Med. Corps.

THE GENERAL MEDICAL BOARD

Medical Education

The Committee on Medical Schools, of which Prof. J. M. Flint of New Haven, Conn., is chairman, submitted the following report to the Medical Board of the Council of National Defense on April 23:

Your committee feels compelled to record its appreciation of the patriotic and eager efforts on the part of the medical schools to meet the emergencies of the present crisis. However, in view of the absolute necessity of maintaining a supply of adequately trained men for the future needs of the army and navy, it cannot express too emphatically its hope that this enthusiasm may not lead to any greater disturbance of our normal education and hospital system than the present emergency demands. Owing to the enormous amount of work thrown on the executive staff of the Medical Section of the Council of National Defense, the committee regrets that it has not been able to put its reports into the hands of the medical schools more promptly and, in turn, to know of their plans—a fact which has made it difficult to determine just what action was being taken in various parts of the country on the recommendations of the board.

Last week, for example, it was brought to the attention of your committee that more schools were planning to adopt the continuous teaching plan than either the needs of the service or circumstances warranted—some complaining that they were being forced to act by competition, others that pressure was being brought to bear by overeager students for the adoption of the system. Conditions indicate that our entire educational and hospital system may be called on to endure a strain, which will require the wisest foresight and caution to prevent it from being wrecked. It seemed wise, therefore, to ask schools to delay further action on the continuous teaching system until a census could be taken, as it is quite certain that too wide an adoption of this policy would not only disorganize the civil hospitals, but also would leave a gap where no men are being trained until the colleges can provide a new supply of medical students. We are on the threshold of England's blunder for the army requires a continuous supply of men with hospital experience.

After a careful consideration of the question, the Executive Committee of the Medical Board of the Council of National Defense urges all medical schools to abandon the plan entirely, as a simple substitute has been devised which is acceptable to the navy and does not endanger our present system at all, but keeps the normal academic schedule as one most likely to maintain a continuous supply of graduates who are prepared to take a hospital service. A meeting of the deans of medical schools has been called in order that the matter may be clearly explained to them and that further misunderstanding be avoided.

Your committee recommends that this board give the widest possible publicity to the wishes of the surgeon-general of the army who wants only men with hospital experience. Accordingly it particularly urges on graduates of the present year who have already contracted with civil hospitals to fulfil the obligation thus implied by securing the hospital experience which the army deems essential.

The medical board has received the following recommendation from one of the medical schools, which has been referred to your committee:

> That requests be made of all the "A" grade medical schools now requiring one premedical college year for entrance to medical school, and the Council of National Defense to join in a request of the Council on Medical Education of the American Medical Association and the Association of American Medical Colleges, to defer the requirement of two years of premedical college work for entrance, until at least the year 1920, or until the exigencies of the war have relieved the need and demand for more medical men.

After careful consideration of the recommendation your committee suggests the following memorandum for your consideration and action:

The Medical Board of the Council of National Defense though highly appreciating the patriotic spirit shown by this institution is not prepared for the present to endorse the proposition to postpone the application of higher standards for admission to the Class "A" medical schools until the need for such action becomes more clearly imperative.

Your committee has also received reports that an increasing number of premedical students are leaving college to enlist in various line organizations. It would consider it a wise precaution, therefore, in conserving the future supply of medical students for the board to use all the means in its power to hold such students in college even should it be necessary to ask the president to issue a special proclamation on the subject calling attention to the fact that it is the patriotic duty of such students to remain under instruction until the country can avail itself of their trained services.

This fact also emphasizes the importance of a communication just received by your committee from the dean of one of our medical schools inspired by some of his students who demand protection against a possible "white feather or yellow crusade" by some form of recognition of the fact that such men are performing an indirect military service for the country. The problem, we understand, is under consideration by the Council of National Defense for the industrial army and we recommend that the medical group be included in its scope.

Another dean feeling the spirit of unrest among medical students requests the medical board to send a notice directly to the student body calling their attention to their duty in the present crisis. Accordingly your committee would recommend the following:

NOTICE TO MEDICAL AND PREMEDICAL STUDENTS

In the present national crisis a continuous supply of adequately trained medical officers is absolutely essential for the maintenance of armed forces in the field. It would be folly for the country to prepare for the immediate emergency alone —we must face the possibility of the war lasting for years. It is, therefore, the patriotic duty of all college students intending to study medicine to remain under instruction until the country can avail itself of their trained services.

Medical schools are in a sense "munition works" necessary to produce trained medical officers for the army and navy. All medical students must, therefore, in the interest of national safety continue their work until graduation. With the exception of such men as the navy can utilize, all graduates are urged to secure a hospital training which the surgeon-general of the army and navy consider essential for their arms of the service.

The Committee on Hospitals

The Committee on Hospitals of the General Medical Board of the Council of National Defense, in its report to the General Board on April 23, submitted the following letters and recommended that they be sent to the principal hospitals of the country. The recommendation was adopted.

TO HOSPITALS OF ONE HUNDRED BEDS AND OVER

The following letter is to be sent to all hospitals of 100 beds or over:

During this crisis in the national affairs, it is imperative that the medical resources of the country be so organized as to safeguard the civil hospitals and civil population, and at the same time to release as many men as may be possible for service with the army. The medical department of the army is faced with the responsibility of furnishing medical officers in large numbers for the proper examination of recruits and the manning of military hospitals.

It is, therefore, requested that this letter be brought to the attention of the trustees and medical staff, and that the staff of your hospital be reorganized and that a list be forwarded to the Hospital Committee, Council of National Defense, Munsey Building, Washington, D. C., within three days of the receipt of this letter. It is requested that this list shall give the names and addresses:

1. Of the hospital.
2. Of those members of the visiting, resident, and dispensary staffs who are needed to remain at home to man the civil hospital.
3. A list of the members of the staff who can be spared.

In the lists of those who should remain at home and those who can be spared, indicate with the letters M. R. C., the men who are members of the Medical Reserve Corps. Also in the list of those who can be spared, indicate those men who are not at present members of the Medical Reserve Corps but who are willing to become members. These should be urged at once to forward their applications to the surgeon-general's office for membership in the Medical Reserve Corps.

It is important that these lists be prepared and sent in immediately. At least 10,000 medical officers will be required and probably more. Unless information such as will be afforded by the preparation of these lists is available as a source of information to the office of the surgeon-general, it will probably be necessary to call out all members of the Medical Reserve Corps, and it might even be necessary to resort to other drastic measures. In this event great hardships would be worked on many of the civil hospitals. It is to prevent disorganization of civil hospitals and interference with the civil activities that this list is requested. It is assumed that you may be counted on for cooperation and prompt response to this request.

TO ALL HOSPITALS

The following letter is to be sent to the superintendents of all hospitals in the United States:

During the past two weeks a committee on standardization appointed by the Council of National Defense and representing medicine, surgery and all of the specialties has been assembled in Washington for the purpose of standardizing all staple supplies needed for hospital use. The purpose of this was twofold:

1. As an aid to the medical departments of the army, the navy, the Public Health Service, the American Red Cross and civilian requirements.
2. In order to prevent unnecessary duplication of articles which the manufacturers would be called on to make, thereby increasing the production of standard articles.

A list of the standards adopted will be sent to you shortly. You are requested to cooperate in this work by confining all new orders to articles specified in the approved list, unless the articles which you wish are already in stock. Your cooperation in this matter will be of tremendous assistance in speeding up production and enabling the medical departments of the army, the navy, the Public Health Service, the American Red Cross and civilian requirements to obtain the necessary supplies.

The effort to acquire a reserve stock of hospital equipment in order to expand in the event of need is approved, but hospitals are urged to do this gradually in order not to cause a sudden increased demand. The manufacturers are cooperating in an excellent spirit, and with a little time will be able to meet all needs. The standard list will be revised from time to time as is found necessary.

Bread in Italy.—The official decree went into effect, March 1, providing that 90 per cent. of the whole wheat grain is to be milled into flour for bread.

Ambulance for France.—The staff of Teachers' College, New York, has sent an equipped ambulance, costing $1,000 to the Ambulance Corps in France.

Epidemic Under Control.—The epidemic of measles, pneumonia and spinal meningitis at the Naval Training Station, Great Lakes, is reported to be under control.

New Base Hospital.—To the list of base hospitals recently published in The Journal should be added Base Hospital, No. 34, Philadelphia (Episcopal Hospital), with Dr. Charles H. Frazier as director.

Ambulances Given.—Mrs. Marcus Kavanagh, Chicago, has obtained a gift of five ambulances for service on the French front. Two of these amublances were donated by Chicago Lodge, B. P. O. E., No. 4.

Lowered Death Rate at Saloniki.—The *Riforma medica* quotes the *Agenzia dei Balcani* to the effect that the cleaning up of Saloniki and its vicinity by the military forces now occupying it has resulted in the reduction of the death rate to less than one fifth of that in previous years.

Physicians on Munitions Board.—The creation of a general munitions board was announced by the Council of National Defense, April 9. Among the members of this board are: Dr. Franklin H. Martin, Chicago; Lieut.-Col. Henry C. Fisher, M. C., U. S. Army, and Surg. Richmond C. Holcomb, U. S. Navy.

Surgeons and Nurses Go Down with Hospital Ship.—Of the fifty-two persons who were drowned when the British Hospital Ship *Salta* was sunk by a mine in the English Channel, April 8, five were medical officers, thirty-eight were members of the Royal Army Medical Corps, and nine were nursing sisters.

Medical Reserve Organization in Albany.—The Association of the Medical Reserve Corps, United States Army, capital district division, Albany, N. Y., has been perfected, and the following officers were elected: president Lieut. J. Lewi Donhauser; vice president, Lieut. Henry L. K. Shaw, and secretary-treasurer, Lieut. Harold D. Cochrane.

Immunologists Volunteer Services.—The American Association of Immunologists, at its meeting in New York, April 6, resolved to offer its services as a body and as individuals, and also to offer the facilities of the laboratories of the various members to the federal and respective state governments.

Plan to Continue Medical Studies in the Field.—The University of Chicago, Ambulance Corps, known as Ambulance Company No. 3, is raising funds to furnish the company with a portable field laboratory and library, that the men may be enabled to continue their studies. An auto truck completely furnished is to be purchased.

Medical Reserve Corps Organized.—At a meeting of 200 physicians, dentists, nurses and druggists at Johnstown, Pa., April 12, permanent organization of a medical reserve corps was effected. Dr. George W. Wagoner was elected president; Miss Ida W. Gailey, first vice president; Miss Leota Guffy, second vice president, and Dr. Henry J. Cartin, secretary-treasurer.

Ambulance Company Items.—The students of Tulane University, New Orleans, through Dr. Rudolph Matas, professor of surgery, have offered an ambulance company to the government for war service.——An ambulance company is being organized at Canton, Ohio.——The medical detachment of the Oregon Infantry makes an appeal for its proper equip- pt-mbulances.
line.

Home Offers Facilities to Nation.—The facili- the Winifred-Mastison Burke Relief Foun- and A red to the nation for service in time of ancient medical table nducts a main convalescent home in Breasted of the Univer. miles from New York, and two

Sachs' Management Vitotal bed capacity of about 300. finance committee of the valescent soldiers and sailors, unanimous report, vindicated t facilities for the reeduca- ipal Tuberculosis Sanatorium b Sachs. The committee said that The Journal has men- had been presented to support the ch having the medical used the sanatorium to build up his pr ovided with oppor-

Robert Koch Society.—At the twenty-ei as circumstances Robert Koch Society for the Study of Tube ose to the firing at the Great Northern Hotel, Dr. James W array of professors. The *Riforma medica* now announces that a camp veterinary school is to be organized along the same lines, although not so close to the front. It is to be located at Bologna.

Resolutions by the Chicago Laryngological and Otological Society.—Members of the Chicago Laryngological and Otological Society have agreed that those who remain at home will take care of the practice of those who go, and will keep an accurate account of receipts from all patients received by reason of the absence of other members in the country's service. All such money will be turned over to the absent physicians and surgeons or their families.

Each member who goes to the front is to notify his patrons of this resolution and ask them to cooperate in carrying out the intent of the resolutions.

Illness Among Illinois Troops.—A case of smallpox has caused the quarantining of Company A, Sixth Illinois Infantry, at Rock Island.——Two companies of the Sixth Infantry at Camp Lowden, Springfield, have been isolated on account of the prevalence of scarlet fever and measles in their ranks.——There are now fourteen pneumonia cases among the Sixth Infantry, under treatment at St. John's Hospital, Springfield, and two deaths have occurred.——Through the efforts of Mrs. Lowden and Mrs. J. Ogden Armour, Miss E. F. Dawson, a trained nurse from St. Luke's Hospital, has been sent to the regimental hospital at Camp Lowden, Springfield.

Sanitary Experts Needed.—The Council of National Defense is endeavoring to obtain information relative to men and women in the United States who have special ability along sanitary lines, and would be available in case of war. These include sanitarians who have had experience in public health work; bacteriologists and their laboratory workers; sanitary engineers, whose experience would enable them to judge of the security of water supplies, to direct sanitary surveys of watersheds and the installation of plants for the treatment of water, and nurses who have had experience in sanitary survey work or other researches along sanitary lines.

Casualty Association Referendum.—The Physicians' Casualty Association of America, Omaha, has sent a circular letter to the members of the association calling for a referendum vote on the question "Shall the Physicians' Casualty Association assume risk of present members, who enlist as medical officers in the United States Army, and if so, to what extent," on the following three points:

1. Service on American soil.
2. Land service on foreign soil.
3. Service at home or abroad, including marine risks.

The directors of the association favor the extension of full benefits to those members who respond to the call of duty to serve their country in war.

Roentgenologists Prepare.—A committee of preparedness has been appointed by the president of the American Roentgen Ray Society. It consists of Drs. Lewis Gregory Cole, George W. Holmes, Leopold Jaches, Willis F. Manges and Harvey W. Van Allen. An auxiliary advisory committee has also been created.

The committee plans: The canvass of the country for a complete list of medical men available for military roentgenology; the establishment of schools in different geographical centers where uniform instruction in military roentgenology may be obtained, and the preparation of a manual on military roentgenography. Men willing to volunteer will kindly communicate with the Committee of Preparedness of the American Roentgen Ray Society, with headquarters at Cornell University Medical College, First Avenue and Twenty-Eighth Street, New York.

Bazaar Receipts Exceeded Half a Million.—The final statement of the receipts and disbursements of the Allied Bazaar, held in Chicago last January, show net receipts of $535,868. The disbursements were as follows:

American commission for training in suitable trades maimed soldiers of France	$28,188.53
American fund for French wounded	28,673.70
American ambulance hospital at Neuilly	36,546.65
B. F. B. permanent blind relief war fund	26,706.59
British Red Cross	19,454.52
Canadian Red Cross	51,094.42
Commission for relief in Belgium	11,675.02
Italian Red Cross	25,344.95
Women's National Health Association	18,090.61
Fatherless children of France	15,075.59
Polish central relief committee	21,034.37
Star and Garter Hospital	14,492.00
War relief clearing house	13,881.15

There is still a balance on hand of $574.49.

Will Conserve Practices of Medical Officers.—The Atlantic County (N. J.) Medical Society, at its meeting, March 30, passed a resolution to take care of the practices of physicians who should go to the front and to turn over all fees collected to him or his family and to return the practice to the officers on their return from war service.——At the meeting of the Wayne County Medical Society held in Detroit, April 9, Major E. P. Biddle, a veteran of the Spanish-American War, stated that it was the duty of the young men to give up their practices and go to war, and of the older men to take care of the practices of the young men while they are away.——The members of the Spokane County (Wash.) Medical Society are considering a plan submitted by Dr. H. B. Cuhn, whereby any member of the society who enters the army or navy should receive pecuniary compensation based on his average income and the salary to be received by the government.——The Indianapolis Medical Society, at its meeting, March 27, adopted a resolution without dissentient voice which provides that the practice of any physician who enters the Medical Reserve Corps of the army or navy shall be preserved intact during the time he is in the service of his country.

Cincinnati Municipal Tuberculosis Committee Acts for Preparedness.—This committee has arranged its program for 1917 with a view to the prevention and adequate care of tuberculosis among soldiers and citizens, due to the entry of the United States into the world war, in order to prevent such horrible ravages as those wrought by this disease among the European armies. The program of the committee is divided into the following subjects: preparation for war conditions, vagrant consumptives, registration of tuberculous and examination of contracts, removal, medical and nursing education, industrial hygiene, state institutions, educational work, dispensary service, employment, infant welfare, camp and institutional care, housing, taxation. The committee suggests as a special war precaution that tuberculosis experts be employed by the government and state military authorities at every recruiting office, so that the cases of those suffering from tuberculosis may be properly diagnosed and that the patients may receive proper care in federal sanatorium camps to be established by the Council of National Defense or in state institutions. The program is outlined with Cincinnati conditions in mind, but the suggestions are of general application.

Employment of Children in Agriculture.—A plan has been formulated by the National Child Labor Committee to utilize the labor of children of the country to the greatest advisable extent in the cultivation of the crops of the coming season, the necessity for which has been made more acute by the supposed shortage of food and the state of war. The committee has sent a circular outlining its plan to every state, county and city school superintendent, the secretaries of agriculture and labor, the Commissioner of Education, the Chief of the Children's Bureau, the Council of National Defense, and others. Under this plan the children are divided into two classes, those under and those over 14. The former are recommended for use at home in garden work, or under the supervision of parents or guardians. The latter may be made use of on farms, under proper regulation as to work and conditions of service. The idea is advocated that boys should be used in groups and kept in camps under careful supervision, as in the camps of boy scouts, and not placed singly with farmers, who would then have the trouble and responsibility of their care. Suggestions as to hours and conditions of work, release from school, and many others are made in the circular for safeguarding the welfare of the children thus to be employed, and America is cautioned to profit by the experience of England, where in the beginning of the exploitation of child labor in agriculture and factory work the policy pursued was found to be too radical and was short-sighted, because it too recklessly set aside former standards.

Report on Toxic Jaundice Among Trinitrotoluene Workers.—The Royal Society of Medicine is about to publish a report on a discussion on toxic jaundice among workers in trinitrotoluene factories, which was held with the approval of the ministry of munitions. This report is fully illustrated. Among the participators in the discussion are: Surgeon-General Rolleston, chairman; Dr. E. L. Collis, Dr. Benjamin Moore, F. R. S.; Major Morley Fletcher, R. A. M. C.; Dr. O'Donovan, medical adviser, ministry of munitions; R. C. Munday, fleet surgeon; Capt. M. J. Stewart, R. A. M. C., and Lord Chetwynd. American physicians and manufacturers who desire copies of this report should notify the secretary of the society at once, as the Royal Society can print but one edition. Single copies of the report may be obtained for $1 and 10 cents for postage; a dozen or more copies will be sent postpaid. The address is J. Y. W. McAllister, 1 Wimpole Street, London, W.

How They Protect the Absent Physician in England.—The medical profession in England has presented to the physicians who stay at home the following suggestions:

1. When a new patient presents himself, the physician staying at home should ask the name of the doctor who last attended him. If this doctor is absent on service, and has left a locum tenens, an attempt should be made to induce the patient to go to the locum tenens.

2. If the last doctor who attended him is on military service, it should be explained to the patient that attendance will willingly be given on behalf of that practitioner and on no other terms.

3. Any attendance on behalf of such patients should be carefully and separately recorded, and a list of such attendances sent at regular intervals to the representative of the absentee.

4. An attempt should be made to ascertain the fees charged by the absentee, and a charge not less than this should be made on his behalf.

5. Accounts rendered on behalf of the absentee should mention the absentee's name, and moneys received should be divided according to the scheme adopted by the local Medical War Committee.

6. The rule of dividing the fee should apply to all kinds of work.

7. New patients introduced by a patient of an absentee should be regarded as belonging to the absentee's practice.

8. In cases in which the patient's frequent change of physician leads to doubt as to who should be regarded as the regular attendant, the absentee should be given the benefit of the doubt.

9. No patient attended on behalf of an absentee should be attended by the deputy for at least one year after the absentee's return.

10. The greatest discretion should be used as to the introduction of a partner or assistant, or in commencing a new practice in an area from which men are absent on service.

11. Physicians newly located in a given district should be doubly scrupulous in regard to the practices of absentees, and should at once ascertain and join in any arrangements that have been made for the protection of absent practitioners.

12. The honor of the profession is involved when a vacancy occurs through the death of a practitioner while in service. Definite arrangements have been made to meet such a contingency in some communities, and should be made in all. Every assistance should be given in enabling the successor to the practice to get a fair start. Local practitioners should carry out the same procedure with regard to the successor as they had undertaken with regard to the man who has fallen while in service.

13. In all cases of doubt as to what is the right course of action as regards an absentee, the practitioner should consider what he would like his neighbor to do if he were absent on military service. The local Medical War Committee, or the Central Medical War Committee are always ready to advise.

In January, 1915, the Scottish Medical Service Emergency Committee issued a statement dealing with the carrying on of the practice of medical men on active service. Later in the same year the Central Medical War Committee for England and Wales issued a similar circular. In both of these it was pointed out that the men going on active service have a right to expect that their interests would be protected by those who remain at home, and it was suggested that where the lo
tenens could not be provided, the work should be d
division of the money earned by the practice of
along the following lines:

(a) Town Practice: An equal divisi
between the absentee and his deputy

(b) Combined Town and Country P
to the absentee and five eighths to
the expenses.

(c) Country Practices
Important: One fourth to
deputy.

Since human nature is
these rules have not
War Committee h
profession in En

(a) No scher
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shortly.
confining all
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tremendous assistance
ing the medical depart-
Public Health Service, the
an requirements to obtain the
serve stock of hospital equipment
event of need is approved, but hos-
this gradually in order not to cause a
mand. The manufacturers are cooperat-
t spirit, and with a little time will be able
The standard list will be revised from time
und necessary.

confidence of the men who are going into active service, and (3) the strong moral support of the local Medical War Committee. This presupposes that the scheme has been fully discussed at a meeting of the whole local profession.

(*b*) It is preferable that there should be a local agreement between the absentee and his deputy or deputies, although it is recognized that this may be impracticable in some cases.

(*c*) The local Medical War Committee should, in such an agreement, be vested with the power of dealing with any disputes which may arise between the absentee and his deputies. The decision of the committee should be binding. The committee should also have the power of appointing another deputy in case of need.

(*d*) Any such agreement should contain provisions whereby the absentee is indemnified against all acts of negligence committed by the deputy.

(*e*) The scheme and agreement should in all cases bind the deputies to refuse to act as the medical attendant of the patients attended for the absentee until a specified time (one or two years) after the absentee's return.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

GEORGIA

Resolutions Adopted by Medical Society on the Drug Supply.—The Stewart and Webster County Medical Society has adopted resolutions on the shortage of drugs due to the granting of patents, voting to call the matter to the attention of the congressman from that district and to bring the matter before the Medical Society of Georgia. The resolutions were adopted, April 13.

ILLINOIS

Rush Alumni Dinner.—All Rush alumni attending the meeting of the state medical association at Bloomington are urged to attend the alumni dinner, Wednesday, May 9, and to send their names as soon as possible to Dr. Franklin C. Vandervort, Bloomington.

Women's Clubs to Conduct Registration Survey.—The Illinois Federation of Women's Clubs is planning a birth and death registration survey of the state for the purpose of correcting deficiencies in the registration of births and deaths, and securing recognition of Illinois as a registration state.

Disease Closes School.—The public schools of Rushville were closed, April 6, for two weeks on account of the prevalence of measles and chickenpox.——Seventy persons with smallpox are reported to be under quarantine at Beardstown, and an order has been issued requiring vaccination of all public schoolchildren.——It is reported that there are thirty-four cases of smallpox at Stronghurst, and Dr. Edwin B. Godfrey of the state board of health has been sent to take charge of the situation.

Chicago

Visitors at Institute of Medicine.—At the meeting of the Institute of Medicine of Chicago, April 24, Dr. Charles V. Chapin, superintendent of health of Providence, R. I., spoke on "The Relative Value of Public Health Procedure," and Surg. Wade H. Frost, U. S. P. H. S., Cincinnati, delivered an illustrated address on "Epidemiology of Poliomyelitis."

Medical History Society Meets.—At the meeting of the Society of Medical History, April 27, Prof. Morris Jastrow, Jr., Philadelphia, delivered an address on "Medicine of the Babylonians and Assyrians," illustrated by lantern slides and ancient medical tablets. A paper was discussed by Prof. J. H. Breasted of the University of Chicago.

Sachs' Management Vindicated.—The subcommittee of the finance committee of the city council of Chicago, in a unanimous report, vindicated the management of the Municipal Tuberculosis Sanatorium by the late Dr. Theodore B. Sachs. The committee said that not a scintilla of evidence had been presented to support the charge that Dr. Sachs had used the sanatorium to build up his private practice.

Robert Koch Society.—At the twenty-eighth meeting of the Robert Koch Society for the Study of Tuberculosis, April 26, at the Great Northern Hotel, Dr. James W. Pettit, Ottawa, spoke on "The Development of the Sanatorium Movement in Illinois." Dr. John A. Turner, Antioch, spoke on "An Efficiency Method, Standardization and Cooperation," and Dr. Walter A. Gekler of the Chicago Municipal Tuberculosis Sanatorium presented a paper on "Phthisiogenesis."

INDIANA

Smallpox Epidemic.—Smallpox is reported to be epidemic in Indiana Harbor. Seventeen patients are said to have been taken from there to the Chicago Isolation Hospital, April 17.

Grading of Milk.—The state board of health, Indianapolis, has adopted regulations that will grade all milk sold in Indiana and provide for the labeling of each grade, under penalties for failure to comply with the regulations. This rule goes into effect Jan. 1, 1918, and follows closely the special investigation committees, which represent all states.

Personal.—Dr. J. Rilus Eastman, who has been in charge of a base hospital abroad, has sailed for home, and expects to reach Indianapolis this week.——Dr. Mitchell O. DeVaney has been appointed health commissioner of Indianapolis, succeeding Dr. Jay D. Nusbaum.——Dr. James A. Duggan, South Bend, has been appointed assistant surgeon in the navy.

New Members of State Board.—Dr. John H. Hewitt, Terre Haute, has been appointed a member of the state board of health, to succeed Dr. John L. Freeland, Indianapolis, resigned. Dr. Hugh A. Cowing, Muncie, has been appointed to succeed Dr. Harley H. Sutton, Aurora. Dr. James S. Boyers, Decatur, will continue as a member of the board, pending the election of his successor.

IOWA

Children's Hospital Bill Passed.—The senate, April 7, unanimously passed the bill appropriating $150,000 for a hospital for deformed children at Iowa City.

Hospital News.—The Isolation Hospital at the University of Iowa will be ready about the middle of May and will accommodate fifty patients.——The Miners Hospital, Albia, is now located in its new home on Second Avenue West.

Personal.—Dr. James A. Bisgard, Harlan, while returning from a professional call, April 13, drove his car into a pile of paving material in the street, seriously damaging his car and sustaining severe injuries himself.——Dr. C. Darwin Enfield, Jefferson, has been accepted for service, and has been directed to report at the Base Hospital, St. Valery, France.——Dr. Frederick C. Skinner has been appointed health physician of LeClaire to succeed himself.

KENTUCKY

Hospital News.—The Hazard General Hospital has been incorporated with a capital stock of $4,000.

Personal.—Dr. Bernard J. O'Connor has been elected a member of the board of trustees of the Louisville Tuberculosis Hospital.

License Required for Anesthetists.—In a friendly suit brought by Dr. Louis Frank and Miss Margaret Hatfield, Louisville, against the state board of health, to determine whether the board has the authority under the law to require nurses to take an examination and obtain a license before administering anesthetics, Judge Curby has decided that the provision in the law pertaining to physicians and nurses is a police regulation, designed for the protection of society, that in all such matters the right of the individual must be laid aside for the safeguarding of the public, and that from the evidence submitted in the case, it is apparent that Miss Hatfield can and should submit herself for examination by the state board of health, and qualify to perform the services for which she is employed.

LOUISIANA

Hay-Fever Clinic.—A free clinic for the prevention and treatment of hay-fever was opened at the Charity Hospital, New Orleans, April 2.

Hospital for Negroes.—The negroes of New Orleans have organized the Providence Sanatorium Stock Company, the object of the organization being to provide a hospital for negroes, owned and controlled exclusively by negroes.

Tuberculosis in New Orleans.—At the meeting, April 4, of the board of directors of the Charities Organization Society, over which Dr. John F. Ochsner presided, it was decided to give $2,000 each year for the aid of tuberculosis cases. The first donation of $2,000 has already been made.

Personal.—Dr. James M. Batchelor has been appointed chairman and Dr. Albert S. Yenni, secretary of the medical advisory board of the Charity Hospital, New Orleans.——Dr. William H. Robin has been elected superintendent of public health of New Orleans and chairman of the city board of health.——Dr. Frank R. Gomila has been elected secretary of he New Orleans board of health and Dr. George H. Hauser, sistant bacteriologist.

Malarial Survey.—Asst. Surg.-Gen. Henry R. Carter, U. S. P. H. S.; Mr. Frederick L. Hoffman, statistician of the Prudential Life Insurance Company; Dr. Oscar Dowling, Shreveport, president of the state board of health, and Dr. William H. Seemann, New Orleans, state bacteriologist, began a tour of the state, April 9, to make a survey of the malaria conditions. The survey will include thirty-five towns and cities, and will be ended April 19.

MARYLAND

Personal.—Dr. Oswald S. Lowsley, New York, formerly of Baltimore, and former assistant to Dr. Hugh H. Young, will be director of the Urologic Clinic in New York, provided for in the will of the late James Buchanan Brady, which is to be established as part of the New York Hospital.——Dr. L. Palmer Holmes will succeed Dr. Lewis A. Sexton, Baltimore, as chief of the Johns Hopkins Dispensary, May 1.——Dr. William C. Leavenworth of the University of Virginia has been appointed third assistant superintendent to the Johns Hopkins Hospital.——Dr. Clement A. Penrose has been named by Mayor Preston as chairman of the new Food Economy Commission of Baltimore.

Meetings.—The one hundred and nineteenth annual meeting of the Medical and Chirurgical Faculty of Maryland was held in Baltimore, April 24 to 26, at the Faculty Building. At the session on the evening of the 24th, two portraits were presented to the faculty, one of Dr. John W. Chambers by Dr. Alexius McGlannan, the other of Dr. Jacob H. Hartman, by Dr. Harry Friedenwald, all of Baltimore. Dr. Henry Barton Jacobs, Baltimore, read the report of the Osler Testimonial Committee, stating that sufficient money had been raised to establish an Osler Fund for the purchase of books for the Medical Library. On the afternoon of the 25th, Dr. Benjamin S. Warren, Washington, D. C., United States Public Health Service, made an address on "Health Insurance: Its Relation to the Medical Profession, and to the Public Health," followed by Dr. J. Hall Pleasants, Roland Park, who spoke on "Health Insurance: Proposed Legislation." The third evening was devoted to a symposium on medical education. Dr. J. McPherson Scott, Hagerstown, Md., spoke of the attitude of the state toward the medical school; Dr. John G. Bowman, director of the American College of Surgery, on "Hospital Standardization," and Dr. Gordon Wilson, Baltimore, on "The Problem of Hospital Interns and How Best to Meet It in the Future." The annual smoker was held in the Banquet Hall on the second evening.

NEW YORK

Personal.—Dr. Matthew D. Mann, Buffalo, president of the Churchmans Club, delivered an address, April 12, at Erie, Pa., on "The Mission from a Businessman's Standpoint."——Dr. Walter E. Deuel, Adams, has been appointed superintendent of the Oswego County Tuberculosis Sanatorium, Orwell, succeeding Dr. A. Garfield Dunbar, Richland, resigned.

Prevention of Disease.—The course of public lectures on "Public Health and Preventive Medicine" which is being given under the auspices of the Albany Medical College, at the State Educational Building on Wednesday afternoons at 5 o'clock will be as follows during May:

May 2: Vital Statistics, Dr. William H. Guilfoy, Registrar of Records, Department of Health, City of New York.

May 9: The Study of Epidemics in the Field, Dr. John A. Smith, Acting Secretary, New York State Department of Health.

New York City

Infantile Paralysis.—A case of suspected infantile paralysis was discovered, April 18, in the Williamsburg district of Brooklyn.——Two cases of infantile paralysis were reported, April 23, by the New York department of health.

Children's Court Quarantined.—The Bronx Children's Society has been put under quarantine because of an outbreak of diphtheria. The first case was discovered April 16, and since that time eight additional cases have developed.

Epidemiologic Test for Suspected Typhoid Fever.—The laboratory of the health department announces that it is prepared to make epidemiologic tests in puzzling and indeterminate cases of continued fever with vague clinical histories that are suggestive of typhoid fever.

Class Reunion.—The class of 1907 of the College of Physicians and Surgeons in the City of New York will hold its decennial reunion and banquet at the Columbia Club, 18 Gramercy Park, on the evening of June 5. Dr. Theodore H. Allen, 3905 Broadway, is secretary of the committee on arrangements.

Physicians Acquitted.—The committee appointed by the East New York Medical Society to inquire into the complaint made against Dr. Philip Oginz, charging him with having violated the Harrison Narcotic Law, in that he prescribed heroin without a physical examination and without keeping a record of the prescriptions, reported that the prescriptions were given in good faith in an honest endeavor to cure a patient of the heroin habit.

Personal.—Dr. Emil J. Pellini has been appointed assistant professor in pharmacology in the University and Bellevue Hospital Medical College.——Capt. Moses Ashby Stivers, Middletown, M. C., has been commissioned major, M. C., N. Y. N. G.——Lieut. Mills Larson, M. C., has been assigned to the Twenty-Third Infantry.——Dr. Raymond W. Lewis, Squadron A., has been commissioned first lieutenant of the Medical Officers Reserve Corps.——Capt. Charles W. Lynn, M. C., has been promoted to major.

Unions Organize Against Disease.—Representatives of various labor unions recently met Dr. Louis I. Harris, head of the division of industrial hygiene of the department of health, and planned for cooperative effort to check occupational disease. Representatives of labor unions will act as a vigilance committee guarding sanitary standards, will confer with the sanitary agencies, and will also disseminate needed information among workers. More than seventy members have already been appointed by their unions to serve on a committee under the direction of the division of industrial hygiene.

PENNSYLVANIA

Twenty-Fifth Reunion.—The members of the class of 1892 of the Pennsylvania Medical College held their twenty-fifth annual dinner in the Fort Pitt Hotel, Pittsburgh, March 24. Dr. John A. Hawkins was chairman of the committee of arrangements.

Vaccine Patients in Hospital.—On accounnt of a case of smallpox in a nurse in the Warren State Hospital, the vaccination of the 2,000 patients and nurses at the institution was begun, April 6.——The state department of health has warned physicians of the danger of a smallpox epidemic, and is carefully watching the smallpox situation at Hillsville, Wampam and Newcastle.

Personal.—The office of Dr. Jesse Sprowls, Donora, was destroyed by fire, April 6.——Dr. Edward A. Weiss, Pittsburgh, while driving his car, April 6, collided with a pole, and received severe cuts of the head from broken glass.——Dr. Joseph P. Ritenour, Uniontown, has been appointed head of the Pennsylvania State College health service, Connellsville, succeeding Dr. Warren E. Forsythe, resigned, to take service with the Rockefeller Foundation.

Philadelphia

Prohibition Demanded by *County Medical Society.*—The Philadelphia County Medical Society, April 18, adopted a resolution asking Congress to prohibit the manufacture and sale of alcoholic drinks.

New Health Center.—The board of directors of the Babies Hospital has selected the site for the new modern health center. The nucleus of the fund was $50,000 given by Mrs. Edwin Douglas to the children of Philadelphia last July. It will be a combined babies clinic and dispensary, and will be in one of the congested districts of the city.

Physicians Organize for Betterment.—A movement to improve the social and economic status of physicians throughout Philadelphia was instituted at a meeting held in Odd Fellows Hall on Thursday, April 12, plans being discussed for the establishment of a higher minimum fee rate, as well as the founding of a permanent association for promoting the welfare of Philadelphia physicians. The newly created organization is to be known as the Physicians' Business Association. Membership will be open to all regularly licensed physicians practicing in Philadelphia County graduated from recognized schools of medicine. A propaganda will be instituted to interest all of the profession in an increased minimum fee schedule. Other needed reforms will be considered in the near future. The following officers were elected: president, Dr. Edwin S. Cooke; vice president, Dr. James H. Baldwin; secretary, Dr. James H. Cunningham, and treasurer, Dr. John H. Remig.

Personal.—Dr. Edward Cameron Kirk, dean of the Dental School of the University of Pennsylvania, and Drs. Matthew H. Cryer and Edwin T. Darby of the faculty have resigned, under the university age limit rule of 65 years.——Dr. Fred A. Fraser, Byberry, has been appointed assistant physician to the bureau of charities.——Dr. William J. Enders, Eagleville, has been elected medical superintendent of the Protestant Episcopal City Missions Home for Consumptives, Chestnut Hill, to take charge the first of May.——George E. Nitzsche, recorder of the University of Pennsylvania, has been appointed executive secretary of the Committee on Medicine, Sanitation, and Red Cross, the most important subcommittee under the Committee of Public Safety of Philadelphia, of which George Wharton Pepper is chairman.——Dr. John B. Deaver was guest of honor at the annual banquet and reception of the Northern Medical Association held at the Hotel Rittenhouse, April 27. Dr. Deaver addressed the society on "Some Considerations of Surgery."——Dr. Julius Proper, Manayunk, was painfully injured in a collision between his automobile and another car, April 10.——Dr. Lina D. Schwatt has been appointed clinical physician at the Philadelphia Hospital for the Insane, Byberry.

TEXAS

Legislature Passes Health Laws.—The thirty-fifth legislature, out of 900 bills introduced in the house and nearly 500 in the senate, enacted a number of important measures, of which several are health laws. An employers' liability act extends the time of medical compensation from one to two weeks. A vital statistics law establishes a state bureau of vital statistics under the state board of health. An intensive rural health law appropriates $70,000 for the state health department for cooperation with counties and with the Rockefeller Foundation for the control of malaria and hookworm. Bills were passed creating a northwest Texas insane asylum, a negro insane asylum, a school for the blind and a state training school for the adult blind. A quarantine station at Sabine Pass was also provided for. Free treatment for indigent patients threatened with hydrophobia also was provided. The annual tax of itinerant medicine vendors was increased from $50 to $100.

WYOMING

Sanatorium Dedicated.—The C. Dana Carter Sanatorium, Thermopolis, was formally dedicated, April 3. The exercises were the first that had ever been held in the state for a building erected on state grounds by private capital.

Scarlet Fever.—On account of the prevalence of scarlet fever in Laramie, the mayor issued a proclamation, April 3, ordering the closing of all schools, churches, and moving picture theaters in the city, and the calling off of all public gatherings and social affairs.

CANADA

Hospital News.—The provincial government of Manitoba has been approached by the trustees of the Winnipeg General Hospital for a grant of $50,000 for an annex to that institution for nervous and temporarily insane patients.——Plans for a new hospital at Fort McMurray, Alberta, have been prepared. It will be built by the Catholic mission.——In order to provide necessary accommodation for returned soldiers it has been decided to build a military hospital in connection with the Vancouver General Hospital. At the annual meeting of that institution recently, reports were submitted, and it was found that it cost $2.01 per patient per day. The deficit amounted to $55,301.70. More than 8,000 patients were admitted to the hospital in 1916. The deaths numbered 464. In the laboratories work has commenced on the colloidal gold chlorid test.

Personal.—Lieut.-Col. Alexander Primrose, Toronto, has been ordered to return to England for hospital work.——Major W. Harley Smith, Toronto, who has been on the staff of the Ontario Military Hospital, Orpington, England, has been ordered to France.——Dr. William H. Ellis of the University of Toronto has been given the degree of LL.D. by McGill University.——Dr. Thomas Jean Bourque, Richibucto, N. B., has been appointed a member of the Canadian Senate.——Dr. Arthur G. Price, Cowichan Station, B. C., has been appointed medical officer of health of Victoria, B. C., in succession to Dr. George A. B. Hall, who is on active service.——Lieut.-Col. George E. Armstrong, Montreal, has relinquished his temporary commission in the Canadian Army Medical Corps.——Lieut.-Col. Hugh Munroe, Saskatoon, Sask., officer in command No. 8 Canadian Stationary Hospital, has been given the command of the Canadian Military Hospital at Hastings, England.——Dr. Charles A. Temple, Toronto, has been transferred from Shorncliffe Hospital to Brighton, England.——Major Henry E. Kendall, Halifax, N. S., C. A. M. C., has been appointed to the command of No. 9 Stationary Hospital in succession to the late Lieutenant-Colonel McLeod.——Lieut.-Col. George MacDonald, M.D., Calgary, Alta., has been appointed to the command of Military District No. 13, Canada.——Capt. Charles A. Publow, C. A. M. C., Picton, Ont., has been appointed adjutant at Bramshott Military Hospital, England.——Capt. Robert M. Shaw, Sault Ste. Marie, Ont., and M. K. McIvor, C. A. M. C., Winnipeg, Man., are reported wounded.

GENERAL

Gastro-Enterologists to Meet.—The twentieth annual meeting of the American Gastro-Enterological Association will be held at the Hotel Traymore, Atlantic City, N. J., April 30 and May 1.

Cuban Women Organize Red Cross.—Under the leadership of Mme. Mariana Seva de Menocal, wife of the president of Cuba, society women in Havana, April 15, organized an active auxiliary for the American Red Cross.

Medicine and the Law.—At the annual convention of the Joint Association of Surgeons of the Illinois Central and Yazoo and Mississippi Valley Railroads, held in New Orleans, March 30, Hon. Hunter C. Leake, New Orleans, delivered an address on "Medicine Within the Law." Dr. William H. Wilder, district surgeon of the Illinois Central, at Birmingham, Ala., delivered an interesting address on "Preparedness in Industrial Medicine."

Internal Revenue Department Revokes Harrison Law Ruling.—Under date of April 10, the commissioner of internal revenue issued the following rule:

> The ruling contained in T. D. 2194, holding synthetic substitutes subject to the provisions of the Act of Dec. 17, 1914, and requiring manufacturers of, dealers in, and physicians prescribing any such substitutes, as therein defined, to register and otherwise conform to the Harrison Narcotic Law and the regulations issued thereunder, is hereby revoked, to take effect this date.

Bequests and Donations.—The following bequests and donations have recently been announced:

Jewish Hospital, Philadelphia, $1,000, by the will of Samuel Keyser.

Endowment Fund Association of the University of Cincinnati, the residuary estate of Mrs. Anna Hunt Heady, Glen Dale, estimated at $100,000, the income of which is to be used to endow a chair in the medical department of the university in the name of the husband of the testatrix, Dr. James F. Heady.

The Chicago Pavilion of the Jewish Tuberculosis Relief Society, Denver, $5,000, the proceeds of two plays at the Empire Theater, Chicago, April 11 and 12.

Northwestern Antituberculosis League of Pennsylvania, $1,000, by the will of Mrs. Joseph Seep, to be used in connection with permanent improvements at the Grand View Sanatorium, Oil City.

A New York hospital, for the establishment of a department of urology, nearly $4,000,000; Johns Hopkins Hospital, Baltimore, $300,000 to build the James Buchanan Brady Urological Institute, by the will of James Buchanan Brady.

New England Deaconess Hospital, Boston, $2,500; Worcester Memorial Home for the Blind, Worcester Home for Aged Men, and Worcester Home for Aged Women, each $1,000, by the will of Mrs. Lizzie J. Trowbridge, Northbridge.

American Ambulance, Paris, about $40,000 as the receipts of the presentation of French war pictures at the Auditorium, Chicago, in April.

Public Health Service Activities.—Surg. George B. Young will deliver a course of lectures before the Women's Branch of the Navy League, Norfolk, Va.——Surg. Benjamin S. Warren, Washington, D. C., has been detailed as medical officer for the United States Employees Compensation Commission to cooperate in the organizing and operation of the work.——Prof. Earle B. Phelps, Washington, D. C., has been directed to proceed to Tuscaloosa, Ala., for consultation with the local health authorities regarding the establishment of a municipal pasteurization plant.——Assistant Epidemiologist John C. Geiger, Huntington, W. Va., has been directed to proceed to such places as may be necessary in the southern states to make a malarial survey and to secure epidemiologic data relative to the disease.——Asst. Surg.-Gen. William Colby Rucker, Washington, D. C., delivered an address on the Public Health Service before the graduating class of Johns Hopkins University, Buffalo, March 28.——Surg. Mark

J. White, St. Louis, delivered an address on "Rural Sanitation," before the Illinois Public Health and Welfare Association at Springfield, April 12 to 13, and delivered a series of lectures on "Public Health" at the Conference of Health Officers, Rosedale, Kan., during the week beginning April 23.——P. A. Surg. John P. Leake, New Orleans, has been directed to proceed to Saluda, Va., to make an epidemiologic study of the prevalence of cerebrospinal meningitis.

FOREIGN

A New Journal on Orthopedic Surgery.—A new medical journal has been founded in Italy, with the title *Chirurgia degli Organi di Movimento*. The editor in chief is Professor Putti of the Rizzoli Institute for Orthopedics, connected with the University of Bologna. He is also incumbent of the university chair of orthopedics.

Marie Appointed to Dejerine's Chair.—P. Marie, professor of pathologic anatomy at the University of Paris, has been appointed to the chair of diseases of the nervous system, to succeed the late Professor Dejerine. Letulle, hitherto professor of the history of medicine, has been given the chair of pathologic anatomy.

Infantile Paralysis in Scandinavia.—Many cases of infantile paralysis are being reported from outlying districts in Sweden, Norway and Denmark. The naval schoolship at Copenhagen is said to have been vacated, April 11, on account of an outbreak of disease among the recruits. There were eleven cases of the disease on the ship, with three deaths, including one lieutenant in the navy.

Golgi Reaches Age Limit.—With the close of this term Italy loses from her teaching force, on account of the age limit, three well known professors, C. Golgi, professor of general pathology and histology at the University of Pavia, who has contributed so much to our knowledge of the nerve cell; G. F. Novara, professor of clinical surgery at the University of Genoa, and G. Roster, professor of hygiene at the University of Florence.

Deaths in the Profession Abroad.—**D. Vitali**, formerly professor of pharmaceutic chemistry at the University of Bologna, and author of over 200 works on pharmaceutic and chemical subjects, aged 85. His "Manual of Toxicologic Chemistry" and other books on changes and frauds in chemicals, his "Compend of Inorganic and Organic Chemistry" and others have been translated into other languages.——**L. Penix**, professor of pharmaceutic chemistry and toxicology at the University of Bologna, aged 55.—**A. Corona**, professor of experimental physiology at the University of Parma, aged 65.

LONDON LETTER

London, April 4, 1917.

The War

SURMOUNTING THE DIFFICULTIES OF DRUG SUPPLY DUE TO THE WAR

At the Royal Society of Arts, Mr. F. A. Hocking, pharmacist to the London Hospital, gave an interesting account of how the difficulties of drug supply due to the war had been partly surmounted. The difficulties were comparatively few, but formidable, and became intensified as the blockade of Germany became more stringent. They mainly concerned (1) the supply of raw material, particularly of potash and of bromin, and (2) the supply of synthetic and some other drugs. Potassium was obtained from Germany because Nature has endowed that country with huge deposits of two potassium compounds —kainite and carnallite—which can be exported at such a price as to render all other sources of potashes unremunerative. On the declaration of war, inquiries were instituted to discover other sources of supply, and the Imperial Institute has published the results in a pamphlet entitled "The World's Supply of Potash." Supplies can be obtained by revival of the kelp industry in Scotland and Ireland; but these are temporary, as the cost of production renders competition with the Stassfurt supplies impossible. Hopes are entertained that the discovery of large deposits of potash minerals in Spain may prove a serious competitor to the Germans in the future. The main difficulty now lies chiefly in supplying potash for artificial manures, for the relatively small requirements of medicine and of the arts have been met without great difficulty, but, of course, at a high price. Prior to the war the world's supply of bromin was derived from the United States and from Germany. The producers in these countries entered into arrangements whereby competition was largely eliminated, in consequence of which the Americans kept away from European markets. The blockade left the Americans master of the situation—a fact of which they were not slow to take advantage, for at one time the price of potassium bromid was $6 a pound, as compared with 37 cents before the war. Bromin, however, is now being prepared in France from sea water in large quantities, and at a price which enables it to compete with the American product. Undeserved blame has been heaped on English firms because they did not immediately undertake the production of synthetic drugs. The question has been frequently put, Why do not English firms commence the manufacture of these drugs and capture German trade? In the first place, the resources of British firms are taxed to the utmost in the endeavor to cope with the sudden and enormous demand for British products for the needs of the allied armies and of the civil populations. In the next place, armies of millions of men cannot be raised and at the same time leave a surplus of labor for new commercial enterprises. Moreover, plants and processes which have occupied the enemy years of thought and labor in bringing to their present state of perfection cannot be improvised in a day. For these reasons little was done in the early months of the war. A start, however, was first made in the east end of London with the production of salicylic acid and its compounds, possibly because the raw materials are easily obtainable and because the process of manufacture is relatively simple, and in the early spring of 1915 the London Hospital received 1 hundredweight of British-made sodium salicylate. Acetylsalicylic acid (aspirin) was the next item to be tackled, and although the early attempts were not satisfactory, difficulties have now been surmounted, and more than one manufacturer is turning out tons of this article of the highest degree of purity. Atropin sulphate, originally derived from Central Europe, is now being produced from Egyptian henbane in large quantities by at least two English firms. Other "German" drugs now being produced in this country are: absolute alcohol, lanolin, butylchloral hydrate, paraldehyd, lactic acid, homatropin, phenacetin, saccharin, salol, xeroform, novocain, salvarsan and potassium permanganate. The chemical laboratories and staffs of various university colleges have been pressed into this work.

LUNACY AND THE WAR: DECREASE IN THE NUMBER OF INSANE

The official report for the year 1915 states that, Jan. 1, 1916, the number of notified insane persons under care in England and Wales was 137,188, being less than that recorded, Jan. 1, 1915, by 3,278. This decrease may be contrasted with an increase of 2,411 recorded for the year 1914, and an average annual increase for the ten years ended Dec. 31, 1914, amounting to 2,251. Thus if that average rate had been maintained during 1915, the number under care, Jan. 1, 1916, would have been 142,717, or 5,529 above the actual record. It is noteworthy that this is the first occasion since reliable statistics have been available (since 1859) on which there has been a decrease in the numbers under care as compared with those of the year preceding. Except in 1885, 1886 and 1890, when such increase amounted to 452, 735 and 728, respectively, the numbers have been nearer 2,000 than 1,000, and since 1893 above the former figure, in all but four years, a maximum yearly increase of 3,235 being recorded in 1904. It is natural, therefore, to infer that the diminution bears some relation to exceptional conditions—social and economic—arising from the war. The admissions during the year were 21,173, or 2,055 below the number recorded in 1914, and of these, 17,710 were first admissions, being 547 below the decennial mean. The report suggests that as the decrease coincides with altered conditions arising from the war, an explanation might perhaps be found in a diminution of insanity owing (1) to the withdrawal from civil occupations of a large proportion of the male population; (2) in the great call for employment by both sexes alike, and (3) the increase in material prosperity afforded thereby. On the other hand, it is remarked that the direct and indirect effects of war in disturbing mental balance in those actively engaged in it, and the stress of anxiety and sorrow experienced by those at home are not to be ignored. These and certain other considerations, however, are regarded at this juncture as too speculative to be given much weight.

AMERICAN PHYSICIANS AT LONDON HOSPITAL

Reporting to the quarterly court of governors of the London Hospital, the committee of management stated that as the War Office had had to call up so many of their house physicians and house surgeons, they considered that the hospital was fortunate in having obtained the services of six highly qualified American physicians. These men were specially selected for the hospital by Prof. Foster Kennedy of New York, and two had worked their passage over as ship stokers. Since the last court they had also engaged six women physicians, who were assisting efficiently.

The Lowest Infant Death Rate on Record

The registrar-general's annual summary of the marriages, births and deaths in England and Wales states that last year infant mortality was 91 per thousand registered births, being the lowest annual rate on record. In 1916, 785,454 births and 508,227 deaths were registered in England and Wales. The natural increase of population by excess of births over deaths was therefore 277,227, the average annual increase in the preceding five years having been 346,119. The number of persons married during the year was 558,454. Calculated on an estimated total population of 35,250,000, the marriage rate in England and Wales during 1916 was 15.4 per thousand, the birth rate 21.6, and the death rate 14.0.

The Unqualified Treatment of Venereal Diseases Penalized

The government has introduced a bill to prevent the treatment of venereal diseases otherwise than by duly qualified physicians. In moving the second reading, Lord Rhondda, president of the Local Government Board, said that the bill was based mainly on the recommendations of the royal commission, from whose report it appeared that 10 per cent. of the population was affected. The urgency of dealing with the diseases was great at any time, but it was far greater now, owing to the war, because the experiences of several centuries showed that after every great war there was a large increase of these diseases. The bill provided that if any person not a qualified physician treated the diseases or supplied remedies he should be liable on conviction on indictment to imprisonment, with or without hard labor, for a term not exceeding two years, or on summary conviction to a fine not exceeding $500, or imprisonment for a term not exceeding six months, with or without hard labor. Schemes for the treatment of these diseases by county councils and county borough councils had been submitted for a district covering a population in England and Wales of 23½ millions out of a total population of approximately 36 millions. Of these, schemes covering a population of 16 millions had been approved, so that in nearly half the country already there was provision made for free diagnosis and free treatment by qualified persons, and the practical difficulties which the commission had in mind had been removed. No doubt the bill would press a little hard on pharmacists, but he believed that as a whole they would offer no opposition. It would, no doubt, interfere to some extent with the livelihood of herbalists, but after receiving a deputation on the subject he saw no reason to change his view that they ought to stand firmly for the suppression of all unqualified persons.

PARIS LETTER

Paris, March 29, 1917.

"Technical Communications" of the Military Health Service

Some time ago the undersecretary of the military health service addressed to the sanitary formations so-called "technical communications" dealing with various subjects of medicine and surgery. These communications were intended to bring to the attention of the military service: (1) the scientific data or therapeutic procedures on which experience has thrown some light; (2) the theories susceptible of practical application, formulated by the learned societies with which the undersecretary of state has been in close communication and collaboration, or the periodical conferences of specialists held by them on their own initiative.

Vaccination Shock and Its Treatment

Under the name of "choc vaccinal," Méry and Hallé have described a syndrome which is sometimes produced by antityphoid and antiparatyphoid vaccination. The onset of this condition is sudden and severe, consisting of a distinct chill, marked prostration and a considerable elevation of temperature. The symptoms may be divided into two distinct groups, occurring in periods. The first group of symptoms embraces the gastro-intestinal manifestations (vomiting, sometimes intractable, diarrhea, often severe, and particularly fetid and watery) and always extreme asthenia with circulatory collapse (cyanosis, deafening of the heart sounds, fetal rhythm, weak radial pulse, sometimes imperceptible, hypotension, and mental torpor not unlike the meningeal state), to which are frequently added renal symptoms (anuria, scanty urine, and urine highly colored, rich in solids and even containing albumin) and sometimes incontinence of bowel and bladder. In exceptional cases there are symptoms of involvement of the liver and spleen. The symptoms of the second period often are not clear and may be inconstant, if treatment of the case is instituted early. They consist of hypothermia, a persistence of the circulatory collapse phenomena and sometimes renal symptoms, especially anuria.

Méry and Hallé advise that this syndrome of symptoms be treated thus: 1. Combat the asthenia and the circulatory collapse phenomena by means of epinephrin, giving during the first twenty-four hours a dose of from 0.001 mg. to 0.002 mg. either by mouth or, and preferably so, subcutaneously. If this route is chosen, the drug is dissolved in physiologic sodium chlorid solution (from 10 to 15 c.c. of solution) so as to avoid painful reaction. Whichever route is chosen, the daily dose, that is, for the twenty-four hours, should be divided so that each dose does not exceed 0.0005 mg. On the following day the daily dose of epinephrin, which should not exceed 1 mg., will be given in 0.25 mg. (0.00025 gm.) doses. One employs eventually in the same manner injections of camphorated oil. 2. Combat the anuria and the other renal phenomena by the injection of an isotonic glucose solution in dosage of from 200 to 300 c.c., repeated twice daily. In addition to such medication, during the period of shock and the days which follow, provided the condition of the stomach permits, the diet must be regulated, giving first sugar solution and then following with a milk diet.

In order to prevent the occurrence of this vaccination shock, Méry and Hallé recommend (1) to take all the necessary precautions to avoid chilling of the patient before and after the injection; (2) to place the patient in the sitting posture so as to avoid syncope; (3) to insist on quiet and rest in bed as soon as possible after the injection; (4) to place the patient on a strict diet the day before the injection is given, and (5) to confine the patient to the hospital the evening and night following each vaccination, and especially emotional subjects, neuropaths, the emphysematous and all those who need to be kept under surveillance.

Inconvenience of Repeated Surgical Intervention in the Case of Lesions of Peripheral Nerves

The Paris Neurologic Society, conforming to its established custom of cooperating with the office of the undersecretary of state of the military health service, has called the attention of Justin Godart to the inconvenience of repeated surgical interventions in the cases of lesions of peripheral nerves. In several cases in which they have done a suture of the nerve for complete or incomplete section, they have reoperated because of the painful phenomena which usually accompany the regeneration of nerve fibers. When one severs and sutures again the injured nerve, in spite of manifest signs of restoration of motor and sensory function, it is possible that paralysis in course of regression may again become a complete paralysis, while, for certain lesions of nerves, the question of a second intervention may sometimes be considered. This is not the case when signs of nerve regeneration are present. Therefore, the Neurologic Society insists on the following: 1. Tardy intervention should not be practiced unless a complete preliminary examination has been made in a neurologic center. 2. A second intervention should never be made without a complete study of the clinical history of the case from its very beginning, a review of the protocol of the first operation, and of the entire series of clinical examinations, as well as the electrical reactions.

Use of Cartilage Grafts in Wounds of the Eye

Dr. Magitot reported two cases of a lacerating wound of the eye caused by a projectile. In spite of the inevitable enucleation of the débris it was possible to make a mobile stump, thus permitting of the satisfactory use of a prosthesis. In one of the cases operation was rendered exceedingly complex by the laceration of the inferior eyelid, which Magitot was obliged to repair piece by piece. The mobile stump was made with the aid of a cartilage graft. Histologically this tissue is insusceptible to attack by micro-organisms, and its consistence makes it possible to suture to it the two lateral eyeball muscles, thus providing for lateral movement. This procedure is applicable in old as well as recent cases. The muscles were repaired in such a way that they could be recovered later, if necessary. When many months after the wounding all of the inflammatory phenomena had disappeared, nothing interfered with the removal of the dead cartilage and its replacement by a piece of living cartilage taken from the patient himself. One is assured of the survival of the graft. One of the patients had to be subjected to a second operation.

Marriages

William Sharpe Cranford, M.D., Meridian, Miss., to Miss Maude E. Parish of Memphis, Tenn., at New Orleans, February 18.

Edwin Barrett Wilson, M.D., New York, to Miss Bettie Turnbull of Carbondale, Pa., at Brooklyn, January 2.

William Benjamin Henderson, M.D., to Miss Bertha Mae liamson, both of Hot Springs, Ark., April 14.

obert Samuel Topping, M.D., Newark, N. J., to Miss Zoe ayoso Barrow of New Orleans, April 17.

Otto B. Kiehl, M.D., Pittsburgh, Kan., to Miss Georgia Lee Howard of Parsons, Kan., March 30.

Lewis Webb Hill, M.D., Boston, to Miss Pauline Wyman Dexter of Brookline, Mass., recently.

James Edward Thiell, M.D., Belvidere, Ill., to Miss Nina Pitz of Manitowoc, Wis., April 11.

Robert B. Tyler, M.D., to Mrs. Rosa Olson, both of Joplin, Mo., at Neosho, Mo., March 31.

Deaths

Elmer Frederick Clapp, M.D., Iowa City; Bellevue Hospital Medical College, 1870; aged 74; a member of the Iowa State Medical Society; professor of anatomy in his alma mater from 1871 to 1889; secretary of the faculty from 1872 to 1879; surgeon to Mercy Hospital, Iowa City, and president of the medical board from 1873 to 1889; surgeon of the state militia and later division surgeon; a veteran of the Civil War, president of the Board of Trade of Iowa City for several years; local surgeon for the Rock Island and Burlington System; once vice president of the Iowa State Medical Society and of the Eastern District Medical Society of Iowa; secretary of the Johnson County (Iowa) Medical Society from 1873 to 1877, and president of the Iowa City Medical Society from 1877 to 1880; died in the Morris (Ill.) Hospital, April 12, from cardiac asthma.

Francis Dowling, M.D., Cincinnati; University of Munich, Bavaria, 1873; aged 68; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; for many years examining surgeon for the United States Marine Corps and Civil Service Commission, Cincinnati; an associate member of the French Society of Hygiene; who was given the Cross of the Legion of Honor four years ago, in recognition of his services in the field of French medical literature; died in the Cincinnati General Hospital, April 12, from cerebral hemorrhage.

George Stockton, M.D., Columbus, Ohio; Bellevue Hospital Medical College, 1875; aged 62; a Fellow of the American Medical Association, and a member of the American Medico-Psychological Association; professor of mental diseases in the Ohio Medical University, Columbus, since 1903; a member of the staff of the Columbus State Hospital for thirty years, and for eight years of that time superintendent of the institution; a member of the medical staff of the Rodebaugh Sanatorium, Columbus; died in that institution, January 9, from uremia.

Phillip Richard Taylor, M.D., Louisville, Ky.; Hospital College of Medicine, Louisville, 1887; aged 53; a Fellow of the American Medical Association; at one time dean of the faculty and professor of materia medica and ther ti and otology, rhinology and laryngology, and clinica of ophthalmology in his alma mater; a specialist o of the eye; ear, nose and throat; died in his office ville, April 8, from the effects of chloroform, self-adm it is believed, with suicidal intent.

Milton D. Schumaker, M.D., Tarentum, Pa.; Western sylvania Medical College, Pittsburgh, 1888; aged 50; fo a Fellow of the American Medical Association; a memb the Medical Society of the State of Pennsylvania and p dent of the Allegheny County Medical Society; a specia on diseases of the ear, nose and throat; who went to Alb querque, N. M., in October last, in search of health; died in that city, April 11.

Robert Dalby Morgan, M.D., Slatington, Pa.; Maryland Medical College, Baltimore, 1910; aged 32; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of Pennsylvania; local surgeon of the Lehigh Valley System and health officer of Slatington; fell in the lobby of the Slatington Opera House, April 11, fracturing his skull, and died at his home, twenty minutes later.

Walter Wake McKenzie, M.D., Hamilton, Ont.; University of Toronto, Ont., 1914; aged 26; a member of the staff of the Hamilton Asylum for the Insane; a member of the Canadian Medical Association and an officer of the Canadian Army Medical Corps; on duty in the Shornecliffe Military Hospital, Shornecliffe, England; died in that institution, February 20, from cerebrospinal meningitis.

Thomas Alexander MacNicholl, M.D., New York; Bellevue Hospital Medical College, 1892; aged 49; a Fellow of the American Medical Association; secretary of the New York State Medical Alliance and vice president of the American Association for the Study of Alcohol and Narcotics; well known as a gynecologist; died at his home in Brooklyn, April 9, from heart disease.

Adam R. Ray, M.D., Brownlee, Neb.; College of Physicians and Surgeons, Keokuk, Iowa, 1888; aged 56; formerly a Fellow of the American Medical Association; local surgeon at Fairfield, Neb., for the Chicago, Burlington and Quincy, and St. Joseph and Grand Island railroads, and medical director of the Sons and Daughters of Protection; died in the Lincoln Sanitarium, March 27.

William Henry Winslow, M.D., Boston; University of Pennsylvania, Philadelphia, 1874; Hahnemann Medical College, Philadelphia, 1877; aged 76; an officer in the U. S. Navy during the Civil War; a specialist on diseases of the eye; author of many historical novels concerning the Civil War; died at his home in Roxbury, Boston, April 8, from pneumonia.

William Cyrus McGrath, M.D., Eagle Grove, Iowa; Northwestern University Medical School, Chicago, 1891; aged 54; a Fellow of the American Medical Association; district surgeon for the Northwestern System, and vice president of the American Association of Railway Surgeons; surgeon to the Eagle Grove Hospital; died in that institution, April 5, from pneumonia.

Robert Vernon Palmer, M.D., Livingston Heights, Va.; College of Physicians and Surgeons, Baltimore, 1894; aged 52; a member of the Medical Society of Virginia; who had been under treatment in the Georgetown University Hospital, Washington, D. C.; is said to have committed suicide, April 5, by hanging himself to the bedpost by a rope made of towels.

Joseph P. Pyle, M.D., Wilmington, Del.; University of Pennsylvania, Philadelphia, 1883; aged 57; a Fellow of the American Medical Association; founder of the Physicians' and Surgeons' Hospital, Wilmington; for several years a member of the board of water commissioners; died at his home, April 7, from diabetes.

Dayton Joseph Long, M.D., Piedmont, W. Va.; College of Physicians and Surgeons, Baltimore, 1897; aged 47; a member of the West Virginia State Medical Association; died in the Western Maryland Hospital, Cumberland, April 4, from injuries received in automobile accident near Barton, March 24.

Charles Henry , **M.D.,** Sha la.; University of Tennes 1894; age ellow of the American Me on; local su e Rock Island System; lled, April llision between automobi

Paul Bliss Nob Francisco cal College, San Fran d 39; his home, in Los om the shot wound of the have suicidal intent.

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Richard Paul Williams, M.D., Farmingdale, N. Y.; Long Island College Hospital, Brooklyn, 1908; aged 31; a Fellow of the American Medical Association; assistant attending surgeon to Mercy Hospital, Nassau; died at his home, April 14.

Francis H. Schoonmaker, M.D., Arlington, S. D.; Northwestern University Medical School, 1887; aged 69; a member of the South Dakota State Medical Association; died at his home, about April 12, from disease of the heart and kidneys.

Dana F. Bothwell, M.D., Pardeeville, Wis.; Ensworth Medical College, St. Joseph, Mo., 1892; aged 50; formerly a Fellow of the American Medical Association; a member of the State Medical Society of Wisconsin; died at his home, about April 8.

Bela Philander Scoville, M.D., Constantine, Mich.; University of Michigan, Ann Arbor, 1868; aged 74; formerly a Fellow of the American Medical Association; died at his home, April 7, from injuries received by being struck by an automobile.

Irvin J. Sampson, M.D., Mellette, S. D.; Baltimore Medical College, 1898; aged 45; a Fellow of the American Medical Association; while making a professional call at night, March 31, was drowned while attempting to ford a flooded creek.

Joseph Ellison Tucker, M.D., Lexington, Mo.; Missouri Medical College, St. Louis, 1881; Jefferson Medical College, 1889; aged 62; formerly a member of the Missouri State Medical Association; died April 8, after a surgical operation.

John Cassidy, M.D., South Bend, Ind.; Rush Medical College, 1868; aged 79; for nearly half a century a practitioner of South Bend; at one time a member of the board of school trustees; died at his home, April 5, from senile debility.

Lewis Washington Moyer, M.D., East Mauch Chunk, Pa.; University of Maryland, Baltimore, 1887; aged 51; a Fellow of the American Medical Association; a specialist on diseases of the eye, ear, nose and throat; died April 12.

Galen Rood, M.D., Stevens Point, Wis.; Medical College of Ohio, Cincinnati, 1856; aged 87; formerly a Fellow of the American Medical Association; a pioneer practitioner of northern Wisconsin; died at his home, April 4.

James E. Clawson, M.D., Philadelphia; University of Maryland, Baltimore, 1855; aged 88; a member of the Medical Society of the State of Pennsylvania, and the Medical Club of Philadelphia; died at his home, April 13.

John Lysander White, M.D., Sacramento, Calif.; University of California, San Francisco, 1901; aged 42; a Fellow of the American Medical Association; was killed in an automobile accident in Sacramento, March 31.

Brainard W. Hines, M.D., Pilot, Va., formerly of Walcot, Va.; Winchester (Va.) Medical College, 1861; aged 82; a practitioner of Montgomery County for more than half a century; died at his home, April 6.

John Logan Thomas, M.D., Topeka, Kan.; John A. Creighton Medical College, Omaha, 1915; aged 32; a member of the staff of the Santa Fe Hospital, Topeka; died at Bassett, Neb., April 4, from pneumonia.

Reuben E. Buckmaster, M.D., New Ulysses, Kan.; Kansas Medical College, Topeka, 1894; aged 48; probate judge of Grant County, Kan.; died at the home of his sister in Dodge City, Kan., April 11.

Eleazer E. Rulison, M.D., Amsterdam, N. Y.; Albany (N. Y.) Medical College, 1881; a member of the Medical Society of the State of New York; died at his home, April 2, from heart disease.

Noel Bertram Ford, M.D., Springfield, Ill.; Meharry Medical College, Nashville, Tenn., 1906; aged 38; a colored practitioner; died in St. John's Hospital, Springfield, March 10, from pneumonia.

Lemuel M. Line, M.D., Columbus, Mont.; College of Physicians and Surgeons, Baltimore, 1884; aged 55; formerly a member of the Medical Association of Montana; died at his home, April 6.

Clyde Ammon Peters, M.D., Bloomsburg, Pa.; Jefferson Medical College, 1915; aged 23; died at the home of his father in Bloomsburg, March 8, from nervous breakdown.

Sumner Hale Hilliard, M.D., Mount Dora, Fla.; Hahnemann Medical College, Chicago, 1891; aged 58; formerly a practitioner of Warren, Ill.; died at his home, March 29.

Wilfred Newell Emery, M.D., Waltham, Mass.; Boston University, School of Medicine, 1891; aged 50; a specialist on diseases of the nose and throat; died at his home, April 6.

John Orlando Reed, M.D., Crafton, Pa.; Jefferson Medical College, 1893; aged 51; a Fellow of the American Medical Association; died at his home, April 5, from pneumonia.

James A. Henderson, M.D., Westmouth, Quebec; McGill University, Montreal, 1893; aged 48; assistant professor of anatomy in his alma mater; died at his home, January 2.

Waldo Hodges Stone, M.D., Attleboro, Mass.; formerly of Providence, R. I.; Boston University, School of Medicine, 1882; aged 61; died in North Rehoboth, Mass., April 6.

C. E. Frost, M.D., Duncan, Okla.; Missouri Medical College, St. Louis, 1878; aged 63; a Fellow of the American Medical Association; died recently at his home.

John Franklin Flint, M.D., Erie, Pa.; University of Michigan, Homeopathic Medical College, Ann Arbor, 1881; aged 74; died at his home, April 5, from influenza.

J. W. McCulloch, M.D., Argyle, Texas; Washington University, St. Louis, 1865; aged 78; died at his home, February 17, from septicemia following a carbuncle.

W. D. Wilson, Beebe, Ark. (license, Eclectic State Medical Board of Arkansas, 1883); aged 74; a merchant of Beebe for sixteen years; died at his home, March 1.

George Edward Friend, M.D., Stetson, Me.; Dartmouth Medical School, Hanover, N. H., 1895; aged 61; died at his home, January 29, from acute gastritis.

Ovila Mallet, M.D., Troy, N. Y.; Laval University, Montreal, 1880; aged 58; a Fellow of the American Medical Association; died at his home, March 25.

Edwin Henry Peck, M.D., Cleveland; Homeopathic Hospital College, Cleveland, 1867; aged 76; died in the Mount Sinai Hospital, Cleveland, April 8.

Duncan Hyndman, M.D., Norvell, Mich.; Western Reserve University, Cleveland, 1869; aged 71; died in Jackson, Mich., January 31, from paralysis agitans.

Martha E. Keller, M.D., Indianapolis; Hahnemann Medical College, Chicago, 1884; was burned to death in her apartment in Indianapolis, April 19.

James Locke Bowles, M.D., South Charleston, W. Va.; North Carolina Medical College, 1914; died at his home, January 14, from heart disease.

Clifford Vaiden McConnico, M.D., San Bernardino, Calif.; University of Pennsylvania, Philadelphia, 1902; aged 38; died at his home, about March 30.

Henry Elwood Retan, M.D., Phoenix, Ariz.; Detroit College of Medicine and Surgery, 1909; formerly of Sturgis, Mich.; died recently in Phoenix.

Wilbur F. Sadler, M.D., Montgomery, Ala.; College of Physicians and Surgeons, Baltimore, 1881; aged 69; died at his home, March 26.

Albert C. Phillips, M.D., Elk Point, S. D.; Sioux City, Iowa, College of Medicine, 1897; aged 43; died at his home, March 31, from pneumonia.

Ephraim A. Knodle, M.D., Arthur, Ill.; Missouri Medical College, St. Louis, 1893; aged 67; was found dead in his room in Arthur, April 3.

Otto B. Poppe, M.D., Chicago; Hahnemann Medical College, Chicago, 1870; aged 75; died at his home, April 15, from spinal sclerosis.

Theodore Louis Adams, M.D., Philadelphia; Hahnemann Medical College, Philadelphia, 1880; aged 59; died at his home, April 12.

John C. Ducker, M.D., Alma Center, Wis.; Lincoln Memorial University, Knoxville, Tenn., 1894; aged 55; died at his home, April 7.

Francis Eugene Harpel, M.D., Danville, Pa.; Hahnemann Medical College, Philadelphia, 1871; aged 72; died at his home, April 3.

Ansel LeRoy Thomas, M.D., Bardstown, Ky.; University of Louisville, Ky., 1908; aged 33; died at his home, March 25, from nephritis.

William Gower Branscombe, M.D., New Bedford, Mass.; New York University, New York, 1867; died at his home, April 10.

Michael Lowenrosen, M.D., Chicago; Harvey Medical College, Chicago, 1897; died at his home, March 29, from pneumonia.

Emil Jeserich, Kansas City, Mo. (license, Missouri, 1873); aged 80; a practitioner since 1860; died at his home, March 30.

Dan Osro King, M.D., Auburn, R. I., Medical School of Maine, Brunswick, 1875; aged 66; died at his home, recently.

Correspondence

"PEPSODENT"

To the Editor:—Of the making of dentifrices there appears to be no end. One of the latest of the patented products "to end the plaque" and "to save the teeth" is called "Pepsodent." This tooth paste, which is said to do "what was heretofore impossible," is now being widely advertised as an "efficient mucin digestant." Its sponsors claim that "Pepsodent," when applied to the teeth as a dentifrice, attacks the mucin plaques which are "the source of most tooth troubles," and that *"Pepsodent attacks this plaque with pepsin."* The individual tubes containing this paste, as it is put on the market, are labeled: *"Pepsodent; proteolytic tooth paste (dental mucin digestant)."* Advertisements in dental journals assert that "the whole object of Pepsodent is to *dissolve* the film" (mucin plaque).

During the course of the research we have been conducting under the auspices of the First District Dental Society of the State of New York, Miss Franke and I took occasion, recently, to inquire into the validity of these plausible claims in behalf of "Pepsodent." We have found that none of these digestive claims is warranted in any degree.

"Pepsodent" is devoid of the digestive power on dental mucin plaques that is commercially ascribed to it. Mucin plaques cannot be digested from teeth by any advertised use of "Pepsodent." There is about as much common sense in the proposed application of "Pepsodent" for this purpose as there is in the oral administration of a few grains of lactopeptin to improve impaired tryptic digestion in the intestine.

The details of the biochemical findings that enforce these conclusions will be published in the next issue of the *Journal of the Allied Dental Societies.*

Our results make it evident that "Pepsodent" is put on the market in utter ignorance of the dental and biochemical principles involved, or with intent to mislead the multitude that may usually be deceived by plausible advertisement.

William J. Gies, New York.

Department of Biologic Chemistry, Columbia University, College of Physicians and Surgeons.

THE THOMPSON MALTED FOOD STOCK PLAN

To the Editor:—I want to call your attention to the efforts being made by the Thompson Malted Food Company in interesting the profession in the sale of their stock here. An agent of this company recently showed me a check from one of our leading physicians for $150, payable to this company for an interest in the business, as an inducement. I cannot see that this is any different morally than for doctors to be interested in certain dairies, or any other business, in which they and their patients have common dealings in the practice of their professions.

They offered to sell me stock, and I told them that under no conditions would I be financially interested in any surgical instrument house, drug store, milk concern or food company, all of which were necessary to the sick and to me in the practice of my profession.

The moral is that if a doctor becomes financially interested in a food factory, he will prescribe the product of that factory in preference to others, on the assumption that it is just as good as others, though it may be inferior. He will resolve any doubt that may exist, in his own interest, and he will be tempted to prescribe a certain food, as he would a certain drug or appliance, regardless of cost to the patient and whether necessary or not.

This agent showed me a list of physicians who were financially interested in this concern. I know of physicians and surgeons who have received commissions from surgical instrument houses for every abdominal belt or elastic stocking prescribed for their patients. Men who will do this would accept a commission from a drug store or food company.

As in "fee splitting," the patient is generally ignorant of the transaction. In the former, as in the latter, the physician would not wish the public to know of the transaction, or of his relation to the business. It is professionally indefensible, and if the profession permits a commercial organization to prescribe its code of morals it corrupts its own ranks and degrades the practice of medicine. It violates the time-honored traditions of the profession which in all times have made the medical profession distinct from other callings in its daily humanitarian services to the sick.

We cannot afford to permit the high aims and purposes of the profession to be abused and debased by the spirit of commercialism, which is common to the ordinary business affairs of life. For the good of the profession and the public, the standard should be exalted, not pulled down.

W. W. Grant, M.D., Denver.

[Note.—The stock-selling scheme of the Thompson's Malted Food Company has been in operation a good many years. In 1911, attempts were made to interest physicians by telling of the glowing prospects that might follow an investment. We have yet to hear of any dividends being paid. The Journal discussed this concern in the Propaganda Department, Oct. 24, 1914, and a reprint of this article will be sent on receipt of a 2 cent stamp. It seems worth while, in view of what Dr. Grant has said, to quote the closing paragraph of the article in question:

> "Disregarding the question whether or not this is a stock jobbing scheme or whether the purchase of the stock is a good investment, there is another side to the matter. It must be evident that the public is not getting a square deal when physicians are financially interested in the products they prescribe for, or recommend to, the sick. Whatever the value of the Thompson products, the method of exploitation and the attempts on the part of the company to get physicians financially interested in its ventures are to be deprecated. If laymen of a speculative turn of mind wish to invest in the stock of companies putting out 'bottled energy,' 'blood builders' and 'nerve repairers' that is their business, but it is certainly neither conducive to the scientific practice of medicine nor to the interest of the public for physicians to be financially interested in products of this sort."

—Ed.]

COMPULSORY HEALTH INSURANCE

To the Editor:—Writing on the merits of the present propaganda for compulsory health insurance (The Journal, March 17, 1917, p. 865), Dr. Frederick L. Hoffman, statistician of the Prudential Insurance Company, arrives at the following conclusions:

> "Thus, briefly restated, organized labor is not in favor of compulsory health insurance, but opposed to it; organized industry and business interests are not in its favor, but opposed to it; and the organized medical profession is not in its favor, but opposed to it."

If this is the situation, and if this situation is accepted as decisive and final, then what is the use of even talking about compulsory health insurance any further? A proposal to which all interested parties are opposed should have little chance of realization.

Surely the bare fact that a few misguided enthusiasts and fanatics in New York are advocating it would not be responsible for the entire movement.

That a real movement exists can scarcely be denied at present. Two state commissions on social insurance have already reported, and both enthusiastically, in favor of the principles of compulsory health insurance (California and Massachusetts), as any one can ascertain by consulting the published reports, or the extracts printed in the *American Labor Legislation Review* for March, 1917.

Governor Johnson of California and Governor McCall of Massachusetts have freely expressed their enthusiastic support of health insurance. What chance would there be for these two experienced and sagacious statesmen supporting a proposal to which employers, employees and the medical profession are opposed? Only a few days ago, the Ohio legislature passed a bill authorizing the appointment of a commission to study health insurance, and that there is great likelihood of similar commissions being appointed in other states as well Dr. Hoffman will not deny.

The facts cited by Dr. Hoffman in support of his broad assertion are of course correct, but they are one sided, and they do not offer a sufficient basis for the assertion.

1. Organized Labor: Mr. Samuel Gompers' opposition to compulsory insurance is well known, but it is far from being

decisive of the attitude of the membership of the American Federation of Labor.

It may be pertinent to point out that Mr. Gompers is also a very violent opponent of voluntary insurance of workingmen through private insurance companies.

It would not be fair, however, to draw the conclusion therefrom that all organized labor is opposed to life insurance, since industrial life insurance companies boast of over 35,000,000 policies in this country, most of them among wage workers.

Dr. Hoffman also refers to the resolution adopted at the last annual convention of the American Federation of Labor. The resolution was against compulsory insurance and especially against private insurance companies in industrial, social and health insurance.

After all, health insurance is a matter of state and not national legislation, for some time. The action of state federations of labor is perhaps equally important. Several state federations, notably those of Wisconsin, Ohio and Pennsylvania, have endorsed compulsory health insurance. The California federation referred the question to a committee, but the fact that the chairman of the federation, Mr. Murphy, is an advisory member of the Social Insurance Commission which strongly endorsed the compulsory plan, is strong evidence as to where labor stands in California.

The names of two or three individual representatives of organized labor are quoted in opposition to compulsion. May I quote, therefore, in support of compulsory insurance such men as William Green, secretary-treasurer of the United Mine Workers and a vice president of the American Federation of Labor: "I do not share the belief of some men that a compulsory plan of health insurance will be detrimental to the wage workers. I can conceive of no other plan which would be successful." The names of Mr. James H. Maurer, president of the Pennsylvania Federation of Labor, John Mitchell, James Duncan and John Golden, president of the United Textile Workers of America, may also be referred to.

Several large international unions have endorsed compulsory insurance, including the International Typographical Union, the United Textile Workers and the Ladies Garment Workers.

In short, organized labor is *not* opposed to compulsory health insurance, but its opinion is divided, with the advocates of compulsory insurance rapidly gaining as they are studying the subject.

2. The Medical Profession: Quoting Dr. Ira S. Wile's statement that "physicians in general are in favor of the general proposition of health insurance," Dr. Hoffman says, "This assertion is a flat contradiction to the fact that the American Medical Association has adopted no resolution on the subject one way or the other," etc.

We beg to submit that there is no such "flat contradiction" between an observation as to the opinion of "physicians in general" and a lack of formal endorsement of the great national association.

It is again true that physicians are not at all in agreement on the subject, and that in several localities medical organizations have gone on record as opposing health insurance. Some of them, as, for instance, the Medical Economic League of New York, have even adopted contradictory resolutions at different times. But at public meetings for discussion of social insurance, physicians' voices are heard both in support and in opposition to it, to which I can easily testify, having spoken before medical organizations in perhaps a dozen states.

3. Organized Industry: The National Association of Manufacturers had a committee on industrial betterment which *did*, after a careful consideration, clearly endorse compulsory insurance. It now appears that the association only *received* and did not accept this report. But that a growing number of large employers fully endorse the principle is evidenced by organizations of sick benefit funds, and in other ways. At the public hearings in San Francisco, Nov. 20-22, 1916, several of the largest employers came out in favor of compulsory health insurance, as, for instance, Col. H. Weinstock, the "Emporium Department Store" and others.

It is an oversight that in the list of the opponents of compulsory health insurance the strongest of them were not mentioned by Dr. Hoffman. These are the private insurance companies, operating directly and through their state insurance federations. After fighting fraternals for years, they have fallen in love with them in California in order to use them in their fight against health insurance. Here is what the Fresno *Republican* (Mr. Chester Rowell's paper) says of this phase:

> With amusing stupidity the argument contends that social insurance is a fatally bad policy for the people, but it will be all right provided the insurance companies are permitted to get their share of the business. It is the stock companies who are paying for this page, and they are trying to crawl in under the protection of the fraternal companies, which there is no purpose in injuring.

Though exploiting the medical profession for five years under compensation, they have engineered a campaign among medical societies in New York City for which unfortunately many physicians have fallen, so that for several weeks a prominent spokesman of the casualty companies was present and spoke at a large number of meetings. And now the casualty companies applaud Mr. Gompers, whose frank opinion of private insurance companies I have quoted above.

I think it would be well if the motives of this campaign were examined by fraternals, labor and physicians, for it has been repeatedly admitted that this opposition of insurance companies would disappear if they were permitted to come in and make profits.

In a page advertisement in the San Francisco *Chronicle*, January 17, these insurance companies stated that: "The proper economic solution of this problem calls for the retention in the field of all carriers and agencies now in existence. . . . Any plan adopted by this or any other state should retain stock insurance organizations." *There* is the true motive of the most obstinate opposition, often disguised and always misleading.

I. M. Rubinow, M.D., New York.

Executive Secretary, Committee on Social Insurance, Council on Health and Public Instruction, American Medical Association.

DUTY OF PHYSICIANS IN URGING ECONOMY OF FOODSTUFFS

To the Editor:—There is danger of shortage in the food supply, particularly of wheat foodstuffs. Every effort, therefore, should be made to meet this contingency. Physicians should realize that they can help in this important form of preparedness.

At the present time, the kind of flour which is employed most widely, the patent flour, contains only from 60 to 65 per cent. of the wheat berry. The remainder is utilized mainly for cattle feed.

Flour which is made of 75 per cent. of the wheat berry is only a little darker in color than the patent flour, and the bread made from it is only slightly less white. Its cost is less and its nutritional value is great, as it contains the bran and the embryo, which have particular virtues. From an economic point of view, it would seem desirable to substitute the coarser type of flour for one that is superrefined. In England at the present time, the mills are required to use 76 per cent. of the wheat in making flour.

It requires no comment to indicate what a saving of 10 per cent. in the utilization of the wheat berry would mean in relation to the wheat crop of the United States, which aggregates hundreds of millions of bushels. The main difficulty in accomplishing this change is the education of the public. The millers are quite willing to supply the grade of flour which the public demands. An educational propaganda is needed to inform the people of the urgent necessity of this economy and also to assure them that the alteration in diet would have no deleterious effect on their health. It would seem that such a propaganda could best be undertaken by the 140,000 or more physicians throughout the United States. If they served on their tables bread made from a coarser flour and if they urged its use to their patients, there would be more likelihood of its general adoption than if it were urged

University of Michigan Medical School	(1914)	Michigan
National University of Arts and Sciences	(1915)	Missouri
St. Louis University	(1914)	Missouri
Western Reserve University	(1911)	Ohio

Nebraska November Report

Dr. E. Arthur Carr, secretary of the Nebraska State Board of Health, reports the oral, practical and written examination held at Lincoln, Nov. 8-9, 1916. The total number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 12, all of whom passed. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Georgetown University	(1915)	80.2
Bennett Medical College	(1915)	76.6
Chicago Coll. of Med. and Surg.	(1914) 75; (1916)	81.4, 82.4
Harvard University	(1916)	84
John A. Creighton Medical College	(1915) 86; (1916)	77.9
Lincoln Medical College	(1916)	75, 80.5
University of Nebraska	(1916)	80.1, 82.4

Michigan Reciprocity Report

Dr. B. D. Harison, secretary of the Michigan State Board of Registration in Medicine, reports that the following candidates were licensed through reciprocity from Aug. 28 to Dec. 22, 1916:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Arkansas	(1905)	Arkansas
University of Colorado	(1907)	Colorado
Bennett Medical College	(1913, 2)	Illinois
Illinois Medical College	(1900)	Illinois
Northwestern University	(1915)	Illinois
Rush Medical College	(1911) (1914, 4)	Illinois
University of Illinois	(1911, 2) (1914)	Illinois
	(1913)	Missouri
University of Louisville	(1910) Virginia; (1915, 2)	Kentucky
Tulane University of Louisiana	(1913)	Louisiana
Johns Hopkins University	(1901) (1902) New York; (1908)	Maryland
Detroit College of Medicine	(1894)	Iowa
University of Michigan Med. School	(1904)	Alabama
Barnes Medical College	(1897)	Missouri
St. Louis University	(1904) Illinois; (1913) (1914)	Missouri
Washington Universitiy	(1911)	Illinois
Dartmouth Medical School	(1883)	New Hamp.
New York University	(1898)	Nevada
Cincinnati College of Medicine and Surgery	(1899)	Ohio
Cleveland College of Physicians and Surgeons	(1908)	Ohio
Laura Memorial Woman's Medical College	(1901)	Ohio
Hahnemann Med. Coll. and Hospital of Philadelphia	(1905)	Penna.
Jefferson Med. Coll. of Philadelphia	(1914)	Penna.
Medico-Chirurgical College of Philadelphia	(1897)	Penna.
University of Pennsylvania	(1907)	Penna.
University of Nashville	(1901)	Arkansas
Vanderbilt University	(1914)	Tennessee
Medical College of Virginia	(1915)	Virginia
Marquette University	(1915) (1916)	Wisconsin
Wisconsin College of Physicians and Surgeons	(1907)	Wisconsin
McGill University	(1906)	Maine

Pennsylvania Reciprocity Report

Mr. N. C. Schaeffer, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports that 6 candidates were licensed through reciprocity from Aug. 29 to Dec. 16, 1916:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Columbian University	(1903)	W. Virginia
Johns Hopkins University	(1912)	Maryland
Dartmouth Medical School	(1911)	New Hamp.
Starling-Ohio Medical College	(1908)	Ohio
Western Reserve University	(1911)	Ohio
University of Texas	(1914)	Missouri

New Mexico January Report

Dr. W. E. Kaser, secretary of the New Mexico Board of Health and Medical Examiners, reports that twelve candidates were licensed on satisfactory credentials at examination held at Sante Fé, Jan. 8-9, 1917. The following colleges were represented:

PASSED

College	Year Grad.	Total No. Licensed
University of Colorado	(1912)	1
Hahnemann Medical College and Hospital of Chicago	(1893)	1
Northwestern University	(1916)	1
Rush Medical College	(1916)	1
University of Louisville	(1912)	1
Tulane University of Louisiana	(1907)	1
Baltimore Medical College	(1906)	1
College of Physicians and Surgeons, Baltimore	(1904)	1
Bellevue Hospital Medical College	(1884)	1
McGill University	(1888)	1
National School of Medicine, Me[illegible]	(1899) (1911)	2

Book Notices

Diseases of Children. By Edwin E. Graham, A.B., M.D., Professor of Diseases of Children in the Jefferson Medical College. Cloth. Price, $6. P. 902, with 93 illustrations. Philadelphia: Lea and Febiger, 1916.

This book was written, its author declares, not from a theoretical but from a practical standpoint. Special effort, he states, has been made to bring the book thoroughly up to date. All of the important matters included in this very important branch of medicine have been treated, especial attention being paid to such subjects as infant mortality, heredity, environment, puberty, fresh air, and diseases of the liver, spleen and thymus glands, all of which, in view of their increasing importance to the practical physician, have been allotted separate chapters.

In a work so comprehensive in scope, it is naturally difficult to present the facts with the clearness and coherence required for complete understanding. The chapter on infant mortality and general statistics contains sixteen pages of statistical information, quoted from numerous authors. These are loosely collected, somewhat difficult to read and more difficult to follow. The author, moreover, has drawn no definite conclusions or deductions from the figures, which should have been done to make them of value. The chapter on heredity is not set forth with sufficient clearness, even for the student who is familiar with the theories and speculations on the subject, while to the uninitiated it cannot fail to be misleading. For example:

> The individual inherits one half of his characters from the two parents, one fourth from the four grandparents, one eighth from the great-grandparents, one sixteenth from the great-great-grandparents, and so on. This is true, not so much in an individual case, as when a large number of individuals are observed in the aggregate.

This is rather a dogmatic statement, and not entirely in accord with modern ideas on the subject.

The photographic reproduction on page 139, illustrating a case of achondroplasia, is more suggestive of a severe case of rickets with infractions than a typical case of achondroplasia. The following describes the mental characters of achondroplasic children:

> Mentally the children are usually rather subnormal, but their mental powers are not markedly defective and they may even be normal. As a rule, however, they develop slowly, are late in talking, and behind the normal child in acquiring knowledge.

These contradictory statements would leave one in doubt as to the mental status of these children if one did not know from previous knowledge that the vast majority of these children are mentally normal. Other incoherent and contradictory statements follow, and the chapter concludes:

> Many of the children die during birth or owing to poor development afterward. Others, as has been stated, may live to extreme old age. They may marry and have children, and their offspring may show either achondroplasia or be absolutely normal.

The arrangement of the presentation of the subject of gastro-intestinal diseases of infancy is rather faulty. In Chapter IX, treating of the child's normal digestion, considerable space is devoted to nutritional disturbances, particularly to the classification of Czerny, Keller and, to a less extent, that of Finkelstein. Then, in Chapter XIII, after a lapse of four chapters, the subject of the diseases of the gastro-intestinal tract is resumed. Having considered dyspepsia according to the classification of Finkelstein on page 206, the author reintroduces the subject on page 267. In the latter instance he treats of fat indigestion, carbohydrate indigestion, protein indigestion, and closes with a discussion of acute gastric indigestion. The confusion is aggravated by a subsequent chapter on acute gastritis and acute gastro-enteritis.

On page 150, discussing the use of alkaline diluents, the author advises lime water or sodium bicarbonate, saying, "It is a matter of clinical experience that the addition of either of these alkalies is of service in infant feeding, and their *beneficial* effect is due to the fact that they tend to retard the action of the rennet ferment in the stomach on the casein." On page 189 the author sees the advantage of Nature's effort to coagulate milk in the stomach by means of rennin and by delaying the passage of food into the duodenum. This formation of curd should, therefore, be encouraged, he concludes, evidently on second thought, as it probably influences the muscular development of the organ to considerable degree. To say the least, there is in these few pages a rather remarkable change of mind.

The value of the book is further impaired by the carelessness of statement in which the thought is insufficiently worked out. In treating the subject of tetanus in the newly born, the author advises that the antitoxin be administered by lumbar puncture, intravenously or subcutaneously. He does not speak of the difficulties or the dangers attending the injection of the antitoxin into the central canal of the spinal cord. He not only fails to speak of the difficulty of the intravenous method of injection, but he makes no suggestion whatever as to the technic of such injection. While the latter method may be dismissed in a summary manner, every one of experience knows that to inject into the vein of the young infant is an extremely difficult operation, feasible only in rare instances. As a rule it is impossible.

The chapter on asthma in infants omits some important data, for instance, the relationship of eczema to asthma. The subject of exudative diathesis is neither affirmed nor denied. It is not even mentioned. In the chapter on tuberculosis, the investigations of Gohn and his students, referring to the primary bronchogenic lesion, are not mentioned.

Recollection of an Alienist, Personal and Professional. By Allan McLane Hamilton, M.D., LL.D., F.R.S. Cloth. Price, $3.50 net. Pp. 416, with illustrations. New York: George H. Doran Company, 1916.

"I was born in the year 1848, 'the year of trouble,' when most of Europe was in a turmoil" is the first sentence in the first chapter of this book. Being of a noted family—he was the grandson of Alexander Hamilton, the great federalist—it was natural that the author in his younger days should be brought into contact with noted men of the period—with such men, for instance, as Washington Irving and Tom Moore, and later in life with Pierpont Morgan, Max Bierbohm, Abraham Lincoln, Professor Hutchings, the lightning calculator, and Louis Agassiz. It is the fact of his wide personal acquaintance with men of note both in this country and abroad that makes these recollections interesting reading. One could wish that fewer people had been referred to and that more was said about the prominent ones.

As Dr. Hamilton had a busy professional life in a large city, came in contact with all classes and conditions of men, and in addition has been a world traveler, his recollections naturally cover a wide observation of men and of affairs. The book covers a period of more than half a century and includes comments on exciting times, taking in the Civil War, and memories of active and well known personalities.

The later chapters, constituting about a third of the book, are of special interest to medical men. They are devoted almost entirely to professional matters, and call to mind many incidents that were of national importance or the subject of newspaper notoriety. The Dis Debar case is one of these. This, it will be remembered, concerned a woman spiritualist entrapping a distinguished lawyer. Then, the sensation caused by the necropsy made on the famous mind-reader Irving Bishop aroused much interest at the time, and it will be remembered, in connection with this, that Dr. J. A. Irwin and Dr. Frank Ferguson, who performed the postmortem, obtained some unpleasant notoriety through its being alleged, without any basis in fact, that Bishop was not dead but in a trance when the necropsy was made. There also are mentioned other more or less noted cases in which alienists especially would be directly or indirectly interested.

Of particular interest is the chapter on "Political Murders," in which Dr. Hamilton gives us the alienist's point of view of Booth, Guiteau and Czolgosz, the assassins, respectively, of Presidents Lincoln, Garfield and McKinley.

The author devotes one chapter to a description of his visit to Mrs. Mary Baker Glover Eddy. It is enlightening and so lacking in prejudice or bias that even the Christian Scientist can read it with profit and without taking offense.

While it was written with the lay reader in mind, physicians will find the book both instructive and entertaining, if for no other reason than that the author has made reference to men and affairs in whom and in which they will be interested. And those whose professional life "harks back" more than a quarter of a century will enjoy the reminiscences that carry them to the days of Oliver Wendell Holmes, Marion Sims, Henry B. Sands, T. G. Thomas, J. C. Dalton, Willard Parker, Alonzo Clark and James W. McLain, not to mention others of more recent years who also have passed away.

Social Medicine, Medical Economics and Miscellany

Venereal Disease in the Italian Army

The *Medicina Contemporanea* of Lisbon, Feb. 25, 1917, gives a summary of an account by C. Simon of what has been accomplished in the active Italian army in prophylaxis of venereal diseases. He states that drastic measures are taken to prevent clandestine prostitution. Women, even married women, are forced to submit to medical inspection when the concordant testimony of infected soldiers points to them as the source of their contamination. These women recognized as sources of venereal infection are isolated in special services and are kept there until cured. In the course of two recent months, 277 women were thus arrested and 232 were found liable to transmit infection. The military authorities have ample power to expel from the war zone every vagabond prostitute. On the other hand, the brothels are inspected four times a week, once by an army medical officer. These brothels are installed close to the firing line, there being, for example, three at Cervignano, two at Palmanova and two at Caporetto. The latter place is so close to the line that shells sometimes fall there. The houses are well installed and abundantly supplied with "preventives" and calomel salve. The women are not allowed to admit any men but soldiers. He adds that the establishment of these brothels caused considerable protest, as it was argued that the regions having been deserted by the populace, there is no occasion for the wearied soldiers to break their enforced continence.

The treatment, he continues, can be applied to the men as outpatients where most convenient, near the resting places of the troops. In regard to prophylaxis, very strict measures are enforced; the men are given frequent "sanitary inspections," and men going out and returning from a furlough are examined with special care. Talks, lectures, lantern slides, moving pictures and other means are used to impress on the men the advantages of continence, the dangers of visiting such women, and the consequences of venereal diseases from the point of view of the individual, of the family and of society at large, grave if untreated, but generally benign if treated from the start by a physician. The use of the preventive disinfection stations is also explained. These cabinets for disinfection post coitum are installed in the different camps and abundantly provided with 1:4,000 solutions of potassium permanganate and of mercuric chlorid, with Metchnikoff's salve; 1:200 protargol solution, and syringes for preventive intra-urethral injections. These stations are in charge of a military orderly under the direction of a physician.

The results demonstrate the efficacy of the measures that have been taken and promise still more success when the projected organization is complete. In the course of November and December, 1915, the number of cases of venereal disease recorded was 5,422 and 5,409. In the month of April, 1916, the number was only 3,224.

Professor Stanziale of the chair of syphilography at the University of Naples has been delivering addresses on the "Profilassi celtica" in war time. The addresses were delivered at Rome, Naples and elsewhere before crowded representative audiences. He extolled the measures that have been enforced in the war zone by the military authorities, but emphasized the necessity for supplementing them with coordinated measures throughout the rest of the country where soldiers gets leave or passing through are free from all restraint in the urged that the whole question of venereal prophylaxis should be placed in the hands of a central administrative body with full powers to act, entrusting it with the responsibility of warding off venereal diseases, and of combating in particular clandestine prostitution which now escapes all restraining measures according to the present laws. He advocated the organization of special dispensaries with laboratory equipment for medical inspection of suspects. Inspection at the home, he declared, is uncertain and fruitless. He emphasized the increasing prevalence of extrasexual contagion, especially of syphilis, wherever there is crowding in home or at work, above all in factories where the mutual use of tools, dishes, etc., throws wide the portals to infection. Urgent measures are needed without delay to prevent the further spread of venereal diseases throughout the country, as the men of the troops come and go and industrial crowding becomes more acute. He remarked in conclusion that the war has awakened the public conscience and the state to many salutary reforms, the benefit from which will long outlast the war, and the social problems are not the least to be considered.

Venereal Prophylaxis

Surgeon C. E. Riggs (*U. S. Naval Med. Bull.,* January, 1917) gives some figures as to the effectiveness of artificial venereal prophylaxis among the men at the naval training station at Norfolk. The treatment consists of calomel ointment of about 33 per cent. strength and an injection of some silver salt of moderate strength. A book is kept in which is recorded the date of the treatment and the number of the hour subsequent to the exposure during which the treatment was taken. Great care is taken to obtain accurate information as to the time of exposure. In a record of 3,556 treatments, 67 turned out to be ineffective. Treatment was administered in 674 instances within the first hour after exposure, and no cases developed; in the second hour, 657, with 4 cases developing; in the third hour, 298, with 2 cases; in the fourth hour, 223, with 1 case; in the fifth hour, 156, with 3 cases; in the sixth hour, 285, with 4 cases; in the seventh hour, 247, with 5 cases; in the eighth hour, 359, with 16 cases; in the ninth hour, 272, with 9 cases; in the tenth hour, 190, with 10 cases; in the eleventh hour and over, 195, with 13 cases developing; so that out of the 3,556 treatments, 67 were ineffective, the percentage, from 0.60 in the second hour, gradually increasing to 6.66 in the eleventh hour and after. It is said that owing to the small number of cases on which the percentages are calculated there is no marked period at which it can be said that the treatments cease to be effective. Even the highest percentage, however, does not seem great when it is considered that practically all prostitutes are diseased. The average rate of venereal infection following illicit intercourse is not known, but probably varies greatly in different communities. Taking the highest percentage of infections above, 6.66, at the eleventh hour and after, as the time when the prophylaxis became ineffective, in the 674 cases of the first hour this would give 44.8 as the probable number of cases of disease prevented Figures for the subsequent hours of treatment can be computed in the same way, subtracting the number of cases of disease actually occurring.

The Mail of War Prisoners

The *Progrès médical* cites statistics published by the Swiss postoffice to the effect that during the month of January, 1917, it received and forwarded to prisoners of war in Austria, France, Germany, Great Britain and Italy a daily average of 426,439 letters and postals, over 20,000 small packages, and [illegible] 889 up to 10-pound packages, in addition to 9,069 postal [illegible] representing a total of over $15,000. The postal orders [illegible] out again and forwarded. Nearly 4,000,000 packages [illegible] have also passed through the hands of the Swiss [illegible] representing since the war began a total of about 16,000,000 pounds. This does not include [illegible]es. The total cash sent in, over 6,000,000 [illegible] represents nearly $18,000,000.

Medicolegal

Physicians May Testify in Will Contests as to Competency of Testators

(*In re Golder's Estate* (*S. Dak.*), *158 N. W. R. 734*)

The Supreme Court of South Dakota reverses a judgment admitting a will to probate, for error in the exclusion of evidence including the testimony of two physicians who attended the testator at about the time of the execution of the will, which testimony was excluded on the ground that it was inadmissible under Section 538 of the code of civil procedure. The court says that it must be conceded that an attending physician—often the family doctor who was long acquainted with the testator—is, both from his special training and education and from his opportunity to observe, generally the best qualified of any person to testify in relation to the mental condition of his patient. There can be no presumption of bias. At common law he was a competent witness. A statute rendering him incompetent, being in derogation of the common law, should be strictly construed and held to apply only where the clear wording of the statute requires such a holding. Section 538 provides, among other things, that "a physician or surgeon cannot, without the consent of his patient, be examined in a civil action as to any information acquired in attending the patient which was necessary to enable him to prescribe or act for the patient." It is to be noted that the section places no limitation whatsoever on the nature of the proceeding wherein attorneys, clergymen and public officials are incompetent, while in the case of physicians it is expressly provided that one is incompetent "in a civil action." The term "civil action" is distinguished from all other proceedings throughout both the South Dakota code of civil procedure and its probate code. Section 12 of the former defines an action as "an ordinary proceeding in a court of justice, by which a party prosecutes another party for the enforcement or protection of a right, the redress or prevention of a wrong, or the punishment of a public offense." Part 2 of the code of civil procedure treats of civil actions, and a reading of it clearly shows that the term as used in such code is restricted to the meaning given in the definition quoted. Is the court justified in extending its meaning as here used so as to include something not clearly within its terms? This question has never before been presented to this court. This is clear from a reading of those cases wherein such evidence was offered in will contests. The decision here is against holding a will contest to be a "civil action," within the meaning of Section 538, but holding that in such a contest the testimony of attending physicians as to the testamentary capacity of the testator at the time of executing the will is admissible.

Validity of Proceedings to Annul License After Failure of Criminal Prosecution

(*State vs. Lewis* (*Wis.*), *159 N. W. R. 746*)

The Supreme Court of Wisconsin says that the proceedings in this case were instituted under Sections 1436e and 1436f of the Wisconsin Statutes to revoke and annul the license granted to the defendant to practice medicine and surgery within that state. In the complaint he was charged with having procured, aided and abetted a criminal abortion on a pregnant woman, and that as a result thereof the woman died. The defendant interposed as a defense to these proceedings an allegation to the effect that he had been tried in the municipal court for Milwaukee County for the same offense, and that judgment had been rendered in his favor. He further alleged that the prosecution on which the complaint herein was based was actuated by malice and ill will toward him. Taking up the latter point first, the court holds that a motion to dismiss the defendant's appeal from an order striking out the allegation in his answer that the proceedings herein were actuated by malice and ill will must be granted, as such an order is not one subject to review by this court by direct appeal therefrom. And to the defense first stated the court holds that a

National

demurrer was properly sustained. By Section 5, Chapter 426, Laws of 1913, there was incorporated into the law and made a part of what is now Section 1435i the provision: "If any person licensed or registered by said board (i. e., of medical examiners) shall be convicted of any crime, committed in the course of his professional conduct, the court in which such conviction is had shall in addition to any other punishment imposed pursuant to law revoke such license or certificate." The defendant contended that where these proceedings were instituted for the canceling or revoking of his license, and that the same canceling and revoking could have been done in the proceedings in the municipal court in case of conviction, pursuant to this provision of Section 1435i, he was in effect being put in second jeopardy. He also contended that in any event the judgment of acquittal in the municipal court might be pleaded as a bar to these proceedings. But these proceedings are declared by the express language of the legislature to be civil proceedings. They have been so held by this court; that this is a civil action and not one which imposes a penalty or prescribes a forfeiture. The effect of the portion of Section 1435i quoted above, therefore, is simply to give, as an incident to such conviction, power to the court in the criminal proceeding to do directly and forthwith what might be done in subsequent civil proceedings. It therefore does not change the nature of the proceedings now before the court from civil to criminal, and unless it does so change their nature there can be no application of the doctrine of former jeopardy, for that applies only as to criminal proceedings. The court must therefore hold that by the present proceedings the defendant was not put in jeopardy for a second time for the same charge on which he was acquitted in the proceedings in the municipal court. Nor does the court agree with the contention that the acquittal in the criminal prosecution of the charge of abortion might be pleaded in bar to these civil proceedings, the court being of the opinion that the difference between the criminal proceedings and these was such that the general well recognized rule applied, namely, that a judgment in a criminal proceeding is neither a bar to a subsequent civil proceeding involving the same state of facts, nor proof of anything in such subsequent civil proceedings except of the fact of conviction. Proceedings such as these are not in their nature an effort further to punish one who may already have been punished for the same offense, but are a rightful exercise of the power of the state to protect its citizens from physicians of bad character. The trial, therefore, of the defendant in this action did not amount to substantially the same thing as a new trial in a criminal prosecution after an acquittal in it. The court remands the cause for further proceedings.

Follows Rule of Nonliability of Charitable Institutions

(Bishop Randall Hospital vs. Hartley (Wyo.), 160 Pac. R. 385)

The Supreme Court of Wyoming, in reversing a judgment obtained by plaintiff Hartley, says that he fell on the sidewalk and broke a bone in his hip. Subsequently he was taken to the defendant hospital and put under the influence of an anesthetic for the purpose of reducing the fracture. A bed was prepared for him, in which hot water bottles were placed to warm it, and when he was put in the bed the hot water bottles were removed to the corners of the bed, and were left along the edge of the bed. In some manner, not explained in the evidence, one of the bottles got under his shoulder, and caused the burn and injury complained of. Two questions were presented for determination: First, was the hospital a charitable institution? Second, if so, was it liable for an injury to a patient caused by the negligence of one of its nurses, in the absence of allegation and proof of negligence of its officers or managers in the selection of such nurse? The court answers the first question in the affirmative, and the second in the negative. The fact that hospital charged for the accommodation and care bestowed on patients who were able to pay did not change its character. That rule is well established by the decisions. The authorities are also almost unanimous in holding that such institutions are not liable in damages for the negligence of their physicians or nurses, in the absence of proof of negligence in their selection.

Society Proceedings

COMING MEETINGS

American Medical Association, New York, June 4-8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am. Assn. of Genito-Urinary Surgeons, Rochester, *Minn.*, May 21-23.
Am. Climatological and Clin. Association, Lakewood, N. J., May 29-31.
American Dermatological Association, Cincinnati, May 24-26.
American Gastro-Enterological Assn., Atlantic City, April 30-May 1.
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28-30.
Am. Laryn., Rhin. and Otol. Society, Niagara Falls, Can., June 1-2.
Am. Medico-Psychological Association, New York, May 29-June 1.
American Neurological Association, Boston, May 21-23.
Am. Ophthalmological Society, Virginia Hot Springs, May 29-30.
American Orthopedic Association, Pittsburgh, May 31-June 1.
American Otological Society, Atlantic City, May 29-30.
American Pediatric Society, White Sulphur Springs, May 28-30.
American Proctologic Society, New York, June 4-5.
American Psychopathological Association, Boston, May 24.
American Radium Society, New York, June 4.
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31-June 2.
American Therapeutic Society, New York, June 1-2.
Arkansas Medical Society, Little Rock, May 1-3.
Association of *American Physicians, Atlantic City*, May 2-3.
Conference of State & Prov. Bds. of N. Amer., Washington, May 30-31.
Connecticut State Medical Society, New Haven, May 23-24.
Florida Medical Association, Atlantic Beach, May 18-19.
Illinois State Medical Society, Bloomington, May 8-10.
Iowa *State Medical Society, Des Moines*, May 9-11.
Kansas Medical Society, Salina, May 2-4.
Maine Medical Association, Portland, June 12-13.
Massachusetts Medical Society, Boston, June 12-13.
Mississippi State Medical Association, Jackson, May 8-9.
Missouri State Medical Association, Springfield, May 14-16.
Nat. Assn. for Study and Prev. of Tuberculosis, Cincinnati, May 9-11.
National Assn. for the Study of Epilepsy, Skillman, N. J., May 28-29.
Nebraska State Medical Association, Lincoln, May 8-10.
New Hampshire Medical Society, Concord, May 16.
North Dakota State Medical Association, New Rockford, May 9-10.
Ohio State Medical Association, Springfield, May 14-16.
Oklahoma *State Medical Assn., Lawton-Medicine Park*, May 8-10.
Oregon State Medical Association, Portland, June 28-30.
South Dakota State Medical Association, Yankton, May 28-30.
Texas State Medical Association, Dallas, May 8-10.
Washington State Medical Association, Spokane, June 17-19.
Wyoming *State Medical Society, Casper*, May 9.

TENNESSEE STATE MEDICAL ASSOCIATION

Eighty-Fourth Annual Meeting, held at Nashville, April 3-5, 1917

The President, Dr. C. N. Cowden, Nashville, in the Chair

Responsibility of Medical Profession with Regard to Prevention and Control of Cancer

Dr. W. M. Johnson, Sparta: The death rate from cancer is increasing at the rate of 2.5 per cent. per annum. In 1881 the mortality was 48.06 per hundred thousand; in 1913 it was 89.03, an increase of 76.01 per cent. Our duty is to instruct the laity to have moles, nevi and keratoses removed in order to prevent the formation of external cancer. The hope of the control of cancer lies in the dissemination of scientific knowledge.

DISCUSSION

Dr. J. M. Clack, Rockwood: It is important to educate the laity as to the outcome of any suspicious growth. Women should be taught that every lump in the breast should be removed, and that every irregular flow from the uterus should be looked on with suspicion.

Dr. Marcus Haase, Memphis: A fully developed epithelioma is an indictment of carelessness against some medical man because the laity does not recognize these precancerous growths. Any physician can destroy these preepitheliomatous growths regardless of his ability as a surgeon.

Dr. A. F. Richards, Sparta: No treatment is so successful as the knife. Every practitioner can remove these precancerous growths from the skin. There is never any reason for leaving a growth of any kind on the skin.

Dr. H. L. Fancher, Chattanooga: Ninty-nine times out of a hundred it is either pain or loss of earning capacity that brings patients to us. The precancerous period, in which we can offer 100 per cent. cures, neither gives loss of earning power nor produces pain. The "cancer doctor" often gets credit for curing a cancer because he applies a remedy in the precancerous period. Until doctors take up this work where the "cancer doctor" takes it up, we cannot offer 100 per cent. of cures. Surgery offers the only cure.

Inguinal Hernia

Dr. H. L. Fancher, Chattanooga: Inguinal hernia is not an accident, but is of gradual formation owing to a preexisting anatomic defect. Operation is the treatment of choice. The recurrences are less than 5 per cent., and the mortality less than 1 per cent. Success depends more on the individual operator and the finer points of technic than on any one of the so-called classical operations.

DISCUSSION

Dr. John A. Gaines, Nashville: Instead of making the ordinary longitudinal incision in line with the sac, I make a transverse incision. This avoids the plexus of vessels, gives a good exposure, obviates the difficulties of dressing the wound, and avoids infection by carrying the wound down to the scrotal line.

Dr. C. N. Cowden, Nashville: The problem of hernia is one of education. Tell a man wearing a truss how little inconvenience it would be for him to be operated on, and how little danger there is attached to the operation. In 99.5 per cent. of the cases the patients get well without a recurrence.

Leukemia

Dr. William St. John, Bristol: The course of leukemia is variable, not uncommonly lasting ten years, the average being about two years. There are periods of relative ill health and periods of well being. The cause of death is usually asthemia. Quite a number, however, die from septic bronchopneumonia. The treatment recommended is arsenic, salvarsan, Roentgen ray, benzol (benzene, C_6H_6), radium, thorium and mesothorium. Removal of the spleen has been attempted, but usually with fatal results. As the marrow is the primary seat of the disease, it is not to be expected that splenectomy would serve any useful purpose. The treatment at best can only relieve symptoms and prolong life.

DISCUSSION

Dr. John A. Witherspoon, Nashville: In the last six months I have seen two cases of acute lymphatic leukemia, both of them lasting but a short time, in which the lymphocytes were largely in excess. One patient, a young man, had a tonsillar infection; his tonsils were removed, and he began to improve. The man developed a lymphatic enlargement, the spleen became enlarged, he became very anemic, and died in great prostration within a month. He had diarrhea, with hemorrhages of all kinds, vomited blood, passed blood by the bowel, and had the rapidly developing symptoms of an acute lymphatic leukemia. The other case was in a child that died within a month after onset of the disease, which first began as an ordinary diarrhea.

Nonspecific Measures in the Treatment of Certain Infections

Dr. J. O. Manier, Nashville: We have used intravenous injections of a 1 per cent. solution of secondary proteose in the different types of so-called infectious arthritis, gonorrheal epididymitis and erysipelas. We begin with a dosage of from 2 to 4 minims of this solution, increasing daily, in the endeavor to obtain a moderate but definite reaction after each injection. Of our series of twenty-four joint cases, five were acute, six subacute and thirteen chronic. Of the acute cases, two were definite cases of acute rheumatic fever; one of these, in a child of 12 years with multiple swollen, tender joints, fever, acid sweats, etc., cleared up entirely within twenty-four hours after a single injection; while the other, in a woman, with multiple involvement, rise of temperature, etc., was entirely relieved after eight injections, except for some residual pain in one shoulder. In the other three acute cases —all of gonorrheal joints—an average of eight injections was given with moderate improvement in two instances, and only mild temporary relief in the third case. In the six subacute cases, an average of six injections was given with complete relief of all symptoms and a return to normal of the involved joints. In thirteen cases of chronic arthritis there were varying degrees of disability from slight stiffness in the milder cases up to complete ankylosis of the majority of the bones of the body in the most severe case. The injections given these patients varied in number from two to eighteen, with an average of seven treatments per patient. The results were complete subjective relief in five, marked improvement in five, and noticeable change in three. In all our cases we have used a secondary proteose, a midproduct of protein digestion. It is our belief that the results obtained are entirely nonspecific in nature and would have followed a similar use of any foreign protein not too toxic in nature.

DISCUSSION

Dr. James W. Jobling, Nashville: In investigating the serum reactions, we have noticed the changes mentioned. We believe the serum changes are secondary in character so far as they relate to the actual results obtained. If you give a guinea-pig a small dose of horse serum, wait fourteen days, and give it another dose intravenously, the guinea-pig will die immediately from anaphylaxis. Somewhat similar results have been obtained in human beings. We have read of instances in which, following a second dose of diphtheria antitoxin, the patient suddenly collapsed, and occasionally death occurred within a few minutes. This is a state of hypersensitiveness to a particular type of protein. This is now believed to be also an explanation of what is termed an infection, such as typhoid fever. Our work has shown the futility of insisting on autogenous vaccines. It has been demonstrated conclusively that autogenous vaccines are not necessary if we use any type of vaccine in a dose sufficiently large. If we use it in a dose sufficient to get a good general reaction, we obtain as good results as with any specific vaccine.

Dr. I. G. Duncan, Memphis: I always use stock vaccines first, and then, if the results are not satisfactory, I have an autogenous vaccine made. In several cases the stock vaccine seemed to do little or no good, but after the use of an autogenous vaccine the cases cleared up quickly. I want to insist that we try to find out what germ is producing the trouble and give that particular vaccine. If this is done, we shall obtain much better results from vaccine therapy.

Left-Sided Appendicitis

Dr. Jere L. Crook, Jackson: The patient was seized with a severe pain in the left iliac region, followed by nausea and vomiting, and a few hours later by fever. After two or three days he was dismissed practically free from symptoms. Five days later the symptoms recurred with more severity. On examination a tumor was found in the left iliac region at the site of the previous pain. The tumor was tender on pressure and dull on percussion. The temperature was 101 F. Blood examination revealed a leukocytosis of 15,000. A tentative diagnosis was made of left-sided appendicitis and abscess, but on account of the rarity of this condition, a median incision was made which revealed that the line of adhesions extended from the middle line entirely toward the left iliac region. A second incision was then made beyond the outer border of the rectus muscle directly over the tumor. This opened up a large abscess containing a gangrenous appendix which had entirely sloughed off. This was removed and free drainage inserted. The patient made an uneventful recovery.

Traumatic Hysteria

Dr. William G. Somerville, Memphis: To treat successfully the neuroses, whether the so-called traumatic or the plain neuroses, it is of special importance for every physician to understand fully not only the motive but also its mechanism. In the case of a supposed traumatic neurosis, the physician must, first of all, satisfy himself by a careful examination that he has to deal with a neurosis, and that the injury is not in itself the cause, then he must frankly state this to the patient, explain to him the mechanism of its development, and make him see his motive. In other neuroses the motive and mechanism can be arrived at by psychanalysis. The patient should be isolated from the family, so that the work of the physician will not be counteracted by a sympathetic mother, wife or husband.

A New Species of Streptothrix Isolated in a Case of Rat-Bite Fever

Dr. William Litterer, Nashville: Rat-bite fever is a rare disease; only eighty-one cases have been recorded. My case is the first one that has been reported in the South. A streptothrix similar to the Blake-Tunnicliff type was isolated from the blood. The employment of an autogenous streptothrix vaccine has apparently cured the patient.

Surgery of the Prostate

Dr. T. G. Pollard, Nashville: Prostatectomy may be done equally as well by the suprapubic as by the perineal route, but the mortality is lower in the perineal operation. The principal point to be considered is the proper preliminary treatment looking to the residual urine, renal impairment, infection and cardiovascular changes.

DISCUSSION

Dr. Eugene J. Johnson, Memphis: I want to emphasize the importance of careful preparation of old men before their prostates are removed. Acidosis is destructive to them. I prefer the suprapubic route because in using a local anesthetic it is better and makes the operative field more accessible.

Dr. I. G. Duncan, Memphis: In operating on the prostate, my experience with local anesthesia has not been quite so favorable. There is a certain amount of shock and the patient squirms and wriggles.

Roentgen Therapy of Uterine Fibromyomas and Hemorrhagic Metritis

Dr. W. S. Lawrence, Memphis: I do not advocate Roentgen therapy for all cases of fibroids. Surgery is the method of choice in most cases, and certainly in young women. These cases should be selected carefully. In cases of hemorrhagic metritis, Roentgen therapy is the method of choice.

Syphilis and Internal Medicine

Dr. James S. McLester, Birmingham, Ala.: Of 567 consecutive private patients, ninety-four, or 16.5 per cent. gave a positive Wassermann reaction. In addition, seven others with a negative Wassermann reaction gave unmistakable clinical evidence of syphilis, thus bringing the percentage to 17.8. This furnishes a fair estimate of the frequency of syphilis in the better class of patients. Among the sick negroes and poor whites in our hospitals, approximately half have syphilis. It is the etiologic factor in from 90 to 95 per cent. of cases of aortitis. Of sixty-one neurasthenics, twenty, or 32 per cent., gave a positive Wassermann reaction. Examination of the spinal fluid suggested paresis in only one, and yet the other syphilitics may all be regarded as potential paretics. There were twenty-six cases in my series which gave roentgenographic and other appearances of ulcer of the stomach or duodenum, and eight of these gave a positive Wassermann reaction. Five of the latter have apparently recovered under the influence of salvarsan, as well as dietetic and other measures. There were twenty-eight cases of pulmonary disease apparently tuberculous. Six of these gave a positive Wassermann reaction and of these only two showed the tubercle bacillus in the sputum.

Fractures of the Neck of the Femur

Dr. Willis C. Campbell, Memphis: In old ununited fractures a bone graft is removed from the tibia and placed through the trochanter, neck and head to within one-fourth inch of the articular surface. In hopeless cases the head of the femur may be removed for pain with much relief. Impaction should not be disturbed in the aged. A simple plaster spica or other splint is applied without disturbing the position of the limb. The Whitman procedure is far superior to other methods, although occasionally good results may occur from any. I have seen one instance of firm union by the Hodgen splint, one with simply Buck's extension, and one in which no treatment was given at all other than rest in bed. Early diagnosis and early treatment by the Whitman technic will undoubtedly prevent a large number of hopeless cripples.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

April, LXXV, No. 4

1 Tissue Tone as Index of Vital Resistance, with Special Reference to Prolapse of Uterus. R. R. Huggins, Pittsburgh.—p. 545.
2 Use of Radium in Gynecologic Diseases. H. Bailey, New York.—p. 556.
3 *Cholesterol in Blood of Mother and Fetus. J. M. Slemons and C. S. Curtis, New Haven, Conn.—p. 569.
4 *Simultaneous Occurrence of Carcinoma and Sarcoma in Uterus. G. W. Outerbridge, Philadelphia.—p. 575.
5 Hydatidiform Mole and Chorio-Epithelioma. M. Caturani, New York.—p. 591.
6 Obstetrics: Review and Forecast. A. B. Emmons, 2d, Boston.—p. 636.
7 Attempted Abortion in Absence of Uterine Pregnancy. A. Stein, New York.—p. 644.
8 *Analysis of Vaginal Flora in Late Pregnancy. H. H. Permar, Pittsburgh.—p. 652.
9 *Microbic Flora in Parturient Vagina, Mouth and Rectum of New-Born. A. Hymanson and J. J. Hertz, New York.—p. 662.
10 Right Sided Pain in Young Women. H. S. Lott, Winston-Salem, N. C.—p. 666.

3. **Cholesterol in Blood of Mother and Fetus.**—The significant results obtained by Slemons and Curtis are: (1) In normal cases delivered without anesthesia the difference between the total cholesterol of maternal and fetal blood is accounted for by the quantity of cholesterol esters in the former; (2) the quantity of free cholesterol is the same in both circulations; (3) the placental partition is permeable for free cholesterol and impermeable for cholesterol esters; (4) practical application of blood cholesterol estimations is made in the clinical examination of cases of autointoxication.

4. **Carcinoma and Sarcoma of Uterus.**—Two cases of combined carcinoma and sarcoma of the uterus are reported by Outerbridge. The first occurred in a woman 73 years of age. The uterus was enlarged, owing to the presence of a partly necrotic submucous tumor, which consisted of sarcomatous and carcinomatous elements, and had apparently arisen by sarcomatous degeneration of a submucous myoma, with carcinomatous degeneration of the overlying endometrium. The second patient was 48 years of age. There was a small but definite area of adenocarcinoma in the fundus, removed by curettage. On examination of the uterus after subsequent hysterectomy the site of the small area of carcinoma was clearly distinguishable, but no further carcinoma could be found. A small intramural nodule, lying in the posterior uterine wall, was found histologically to be a myoma with areas of definite sarcoma.

8. **Vaginal Flora in Late Pregnancy.**—A study of the vaginal flora in pregnancy, carried out by Permar according to the ordinary modern routine laboratory methods, reveals a variety of organisms, and various definite strains of each, and is of particular interest in regard to the types of the streptococci and the organisms of the typhicoli group. A relation apparently exists between the ability of various groups of organisms to flourish in an acid medium, and the presence of these organisms, notably the streptococci, the members of the typhicoli group, and the blastomycetes, in the vagina. The presence in the vagina of streptococci giving the carbohydrate reactions of virulent organisms, as well as those of less virulent character but corresponding to forms recognized as having definitely invasive qualities, is comparable to that recognized in the other cavities, in which virulent or apparently virulent organisms are constantly present without giving rise to disease processes.

9. **Flora in Parturient Vagina, Mouth and Rectum of New Born.**—Of forty-two cases tabulated by Hymanson and Hertz, resultes were positive in sixteen and negative in twenty-six. In but four cases were the same organisms found in the maternal passages and baby's mouth and rectum (staphylococcus 3, streptococcus 1). In the other six postive cases the finds were not uniform. In one case the streptococcus was found in the vagina, the staphylococcus in the mouth and the colon

bacillus in the meconium. In a second case the streptococcus and *B. coli* and *Staphylococcus albus* were found in the vagina and streptococcus and *Staphylococcus albus* in the rectum, with an absence of *B. coli,* and no growth in the mouth. In one case the staphylococcus was found in the vagina and the colon bacillus in the meconium. In another case the staphylococcus was found in the vagina, and also in the meconium, the streptococcus being present in the mouth. In a third case the gram-positive bacillus was found in the vagina only.

American Journal of Physiology, Baltimore

April, XLIII, No. 1

11 *Microdissection Studies. Visible Structure of Cell Protoplasm and Death Changes. R. Chambers, Jr., New York.—p. 1.
12 Oxygen Pressure Necessary for Tissue Activity. M. T. Burrows, Baltimore.—p. 13.
13 Physiology of Atrioventricular Connection in Turtle. Influence of Vagi and of Sympathetic Nerves on Its Rhythm Forming Power. C. C. Gault, New Haven, Conn.—p. 22.
14 Conditions Determining Rate of Entrance of Water into Fertilized and Unfertilized Arbacia Eggs, and General Relation of Changes of Permeability to Activation. R. S. Lillie, Woods Hole, Mass. —p. 43.
15 Effect of Starvation on Catalase Content of Tissues. W. E. Burge and A. J. Neill, Chicago.—p. 58.
16 Changes in Amount of Salivary Secretion Associated with Cerebral Lesions. K. S. Lashley.—p. 62.
17 *Studies in Physiology of Respiration. Capacity of Air Passages and Percentage of Carbon Dioxid in Alveolar Air During Rest and Exercise. R. G. Pearce, Cleveland.—p. 73.
18 Gradient in Susceptibility to Cyanids in Meridional Conducting Path of Ctenophore Mnemiopsis. C. M. Child, Chicago.—p. 87.
19 *Carbon Dioxid Acidosis, Cause of Cardiac Dyspnea. J. P. Peters, Jr., New York.—p. 113.
20 Reactions of Kittens After Decerebration. L. H. Weed, Baltimore. —p. 131.

11. **Visible Structure of Cell Protoplasm.**—The bulk of Chambers' paper deals with results obtained from studies on the protoplasm of *Asterias* and *Arbacia* ova. He claims that protoplasm is a hydrophilic colloid which, in early germ cells, egg cells and protozoa, usually exists in the sol state with a surface layer in the gel state, which is very extensile and contractile and is readily regenerated on injury. Tearing of this surface, if unrepaired, results in the pouring out of the internal cytoplasm and dissolution. A remarkable property of protoplasm is its ability to form a protective gel film not on its external surface but also around an injured area which is in the process of disorganization. The disorganized mass thus insulated is eventually expelled from the cell. A continuous but gradual application of mechanical injury can be sustained by a cell for some time without evidence of harm done. A short but rapid application produces instant local destruction, the spread of which may involve the entire cell. The germinal vesicle of an immature egg consists of a hyaline liquid enclosed in a gel-like membrane. The cytoplasm of an immature egg is comparatively impervious to mechanical tearing, that of a mature egg is very much more senstive. In the mature egg the nucleus behaves as a fluid droplet whose substance is immiscible with the cytoplasm. It may be divided into two droplets which unite on touching. It coagulates with ease on mechanical injury.

17. **Physiology of Respiration.**—Methods for calculating the dead space and the percentage of carbon dioxid in the expired alveolar air are proposed by Pearce in which the necessary data are obtained by determining the amount of air and the percentage of carbon dioxid in the air of a normal and deep expiration. By the use of these methods, only a small variation in the dead space or the percentage of carbon dioxid could be determined between the conditions of rest and exercise consisting of walking 3½ miles an hour. A recalculation of the data given by Douglas and Haldane, using the proposed method, fails to confirm their conclusion that the capacity of the dead space increases to anything like the extent they claim. The Haldane-Priestley method for the estimation of the carbon dioxid percentage in the alveolar air gives results that are too high.

19. **Carbon Dioxid Acidosis and Cardiac Dyspnea.**—This paper deals with the discrepancies observed by Peters in a series of cases in a comparison of the carbon dioxid of the alveolar air and that of the plasma. Five normal cases, eleven diabetics one case of starvation acidosis, one gout, one arthritis deformans with obesity, five acute nephritics, two cases of mild chronic nephritis, eight cases of advanced chronic nephritis, and one of renal tuberculosis and chronic nephritis were studied; in all thirty-five cases, with seventy-six determinations. Fifty-two ratios fall between 0.90 and 1.10; sixty, or 79 per cent., between 0.85 and 1.15. In all but three persons a normal relation was at some time observed, and in two of these only single studies were made. The fifteen abnormal readings were distributed among seven cases; three diabetics, one starvation acidosis, one gout and three chronic nephritics. The alveolar readings in those with normal ratios varied from 19.6 to 47.6 mm. Hg, while the plasma values varied from 21 to 48. The relation, therefore, seems to be independent of the carbonate content of the plasma. In the five normal persons the eighteen ratios obtained all fell between 0.94 and 1.10 giving a maximum variation of 0.10 or a mean variation of 0.04.

In the majority of cases, then, there is a very close correspondence between the two, so close as to suggest that a ratio below 0.85 or one above 1.15 denoted some abnormality in the respiratory mechanism. Nineteen other cases were examined. In all there was cardiac decompensation with more or less dyspnea, and usually some degree of cyanosis. The first five cases had hypertensive nephritis with cardiac decompensation. All had very definite dyspnea. In other words, the dyspnea was not due to an acidosis. The remainder of the cases were simple cardiac cases with dyspnea. Of these only one showed an acidosis in the plasma determinations, and this was very slight. All but two, however, showed an alveolar plasma ratio below 0.85 at some time during their course. Of these, one went as low as 0.86 and the other showed no definite decompensation. In almost all cases with marked improvement, or where the studies were continued into the period of compensation, the ratio increased, approaching or attaining the normal. In some cases, with an interval of improvement a normal relation was established, only to fall away again with development of a new insufficiency. Three cases with extreme pulmonary disease showed a similar disturbance of the alveolar plasma ratio.

American Journal of Roentgenology, New York

April, IV, No. 4

21 Relation of Bodily Habitus to Visceral Form, Position, Tonus and Motility. R. W. Mills, St. Louis.—p. 155.
22 Coolidge Tube Technic with New Type Transformer. A. M. Cole, Indianapolis.—p. 170.
23 Roentgen Diagnosis of Gastrocolic and Duodenocolic Fistulae. M. P. Burnham, San Francisco.—p. 175.
24 Rhinoscleroma and Roentgen Ray. G. M. Mackee, New York. —p. 180.
25 *Improved Cancer Prognosis Justified by Deep Roentgen Treatment. A. F. Holding, New York.—p. 183.
26 Head Leveler for Study of Pituitary Fossa and Accessory Sinuses. G. E. Pfahler, Philadelphia.—p. 193.
27 Roentgenography of Prostate. W. A. Evans, Detroit.—p. 196.

25. Abstracted in The Journal, Nov. 18, 1916, p. 1549.

Boston Medical and Surgical Journal

April 5, CLXXVI, No. 14

28 History of Military Medicine and Its Contributions to Science. Chamberlain.—p. 479.
29 Eclampsia at Boston City Hospital; Review of Cases of Twenty-Three Years. E. B. Young, Boston.—p. 486.
30 *Remissions in Leukemia Produced by Radium in Cases Completely Resistant to Roentgen Ray and Benzol Treatment. T. Ordway, Albany, N. Y.—p. 490.
31 *Metabolism Study of Case of Leukemia During Radium Treatment. A. Knudson and T. Erdos, Albany, N. Y.—p. 503.

30. **Radium Treatment in Cases of Leukemia Resistant to Roentgen Ray and Benzol Treatment.**—Surface applications of radium in leukemia, Ordway says, produce striking, indeed remarkable, improvement in (*a*) the blood picture which becomes almost normal, (*b*) in the size of the spleen and glands, which are reduced almost to normal, (*c*) in the general condition of the patient, who, from an emaciated and weak condition, may become plump and strong. The duration of remission is variable; it may last from months to years. The results of radium treatment are not regarded as curative. It is believed, however, to be the safest as well as the most prompt palliative measure in cases of chronic leukemia, whether refractory or not to benzol or roentgenotherapy.

From the results of radium therapy in leukemia it is believed to be the best form of treatment now at our disposal.

31. **Radium in Treatment of Leukemia.**—Knudson and Erdos found that the excretions of total nitrogen, urea, ammonia and phosphates are enormously increased immediately after the action of radium. The uric acid output is only slightly increased compared to the other nitrogenous constituents. Surface applications of radium over the spleen accelerates the disintegration of nuclein tissue, resulting in the above increases. The uric acid which would be expected to be formed by disintegration of nuclein is probably broken up further so that it is not increased. The phosphates show the most remarkable results, increasing as high as 400 per cent, at times, over the excretions at the beginning of treatment.

Bulletin of Johns Hopkins Hospital, Baltimore

April, XXVIII, No. 314

32 Recent Epidemic of Infantile Paralysis H Emerson, New York —p 131.
33 *Placental Transmission; Creatinin and Creatin in Whole Blood and Plasma of Mother and Fetus E D Plass, Baltimore —p 137.
34 *Obstetric Significance of Blood Sugar with Special Reference to Placental Interchange W. H Morriss, New Haven, Conn —p 140
35 *Changes in Blood Picture after Nucleic Acid Injections. C A. Neymann, Baltimore —p 146
36 *Leukemia, Pseudoleukemia and Hodgkin's Disease. C H. Bunting, Madison, and J L Yates, Milwaukee, Wis —p 151

33. **Creatinin and Creatin in Whole Blood and Plasma of Mother and Fetus.**—Simultaneously collected samples of maternal and fetal blood were analyzed by Plass by Folin's method for preformed and total creatinin The determinations on unhemolyzed and hemolyzed whole bloods brought out no definite information with regard to the exchange between mother and child, but when serum or plasma was used, a definite relation was clearly established. The concentration of both fractions is the same under normal conditions in the plasmas which are naturally the fluids concerned in the placental interchange The plasmas of both mother and child contain the same amounts of preformed and total creatinin The values are the same as those found in nonpregnant women The preformed and total creatinin apparently pass between the mother and fetus by simple diffusion

34 **Blood Sugar During Pregnancy.**—According to Morriss, who examined the blood of eleven patients at various periods of gestation, normal blood sugar values (0 09 to 0 11 per cent) prevail during pregnancy and the puerperium. During the early part of labor the values are normal, but in the second stage the blood sugar is increased In twenty-eight cases at the moment of birth the average maternal blood sugar was 0 132 per cent The rise in the blood sugar is partly due to the mother's voluntary afforts to expel the fetus, and it is accentuated by the use of an anesthetic At the moment of birth the fetal blood sugar is lower than the maternal In twenty-four normal cases, in most of which an anesthetic was used, the average fetal value was 0 115 per cent The concentration of glucose in the two circulations is such that the placental interchange may readily be explained by the process of diffusion, and the lower concentration in the fetal blood assures a flow of glucose from mother to fetus After obstetric operations higher values are found for the blood sugar in both mother and fetus, and are explained by the influence of the anesthetic. Normal blood sugar values prevail in preeclamptic toxemia though a rise occurs just after a convulsion Also after repeated convulsions, or with pronounced renal involvement, the percentage of blood sugar may be notably increased

35 **Changes in Blood Picture After Nucleic Acid Injections.**—Four patients (one represented a depressive paranoid reaction type; one a hysterical reaction type with schizophrenic features; one an undoubted schizophrenic reaction type, and the last a depressive reaction type with marked schizophrenic features) were injected with Lundvall's solution by Neymann Three main facts stand out: the comparatively short time that the leukocytosis lasts, the gradual increase in doses necessary to produce leukocytosis as the patient develops a tolerance for the drugs, and the decrease in the percentage of hemoglobin and in the number of erythrocytes. The differential counts showed a relative increase of polymorphonuclear cells and eosinophils. No pathologic elements were observed. The psychic behavior of the patient was similar to that which one would expect after any shock. The injections are very painful. The rise in temperature of from 2 to 3 degrees causes a feeling of being ill at ease, with headache and nausea as accompanying factors, and the whole procedure, necessarily carried on in spite of the protests of the patient, is a cause for excitement. As a result of this shock the patients transfer their attention to the difficulties caused by the treatment and place their own internal difficulties more in the background. Thus, the three schizophrenics who showed a catatonic tendency, were more inclined to talk, and were generally brighter during the twenty-four hours directly following a treatment, whereas the depression case, whose worries were centered on the imaginary prospect of being put in jail and castrated, now worried about the time of the next treatment. Though the patients quickly regain their original number of erythrocytes, it takes several weeks for the percentage of hemoglobin to reach the normal figure. These disadvantages would in themselves seem to preclude the continued regular injection of the solution

36 **Leukemia, Pseudoleukemia and Hodgkin's Disease.**—The evidence which Bunting and Yates claim points toward etiologic significance of the diphtheroid organism found by them in the lymph nodes of these cases is in outline as follows: 1 The constant occurrence of the organisms in Hodgkin's disease and in the allied group under discussion. This is true not only for single determinations but for repeated examinations, as, for example, seven successful cultures from one case over a period of five years (neck, groin and axilla). 2 The occurrence of the organism where it would explain the lesion. 3. The occurrence of the so-called Hodgkin's blood picture in the whole group of cases enumerated, in laboratory animals (monkey, rabbit) inoculated with the living organism, and in one normal individual inoculated with the dead organisms (vaccine) 4. The occurrence of abscesses in laboratory animals (monkey, dog, rabbit, guinea-pig and horse) at the portal of inoculation, with lymph nodes changes similar to those seen in early Hodgkin's disease. 5 The occurrence of complement deviation by the use of the patient's serum and diphtheroid organisms (unpublished series of experiments by Yates and Kristjanson). 6. The occurrence of a glandular reaction and of a skin reaction in patients injected with immune serum resulting from the use of a diphtheroid antigen.

California State Journal of Medicine, San Francisco

April, XV, No. 4

37 Students' Health Insurance at University of California. R. T. Legge, Berkeley —p 102
38 Symptomatology of Hyperthyroidism H H Lissner, Los Angeles. —p 104
39 Treatment of Syphilis G MacGowan, Los Angeles —p. 106.

Delaware State Medical Journal, Wilmington

January, VIII, No 1

40 History of Bodysnatching L Eliot, Washington, D. C —p 3.

February, No 2

41 Clinical Manifestations of Pituitary Disorders. C. H. Frazier, Philadelphia —p 2
42 Symptoms and Diagnosis of Gallstones. P. R Smith, Wilmington. —p. 4.

Journal of Medical Research, Boston

March, XXXVI, No. 1

43 Anatomic Study of Fifteen Cases of Acute Poliomyelitis. W. B. Blanton, New York —p 1
44 *Case of Metastatic Leiomyosarcoma Primary in Uterus. L. U. Gardner, Boston —p 19
45 Influence of Serum on Staining of Bacteria in Suspensions M. S. Fleisher, St Louis —p 31
46 Some Morphologic Effects of Prolonged Inanition A. W. Meyers, San Francisco —p 51
47 *Part Played by Goblet Cells in Protozoan Infections of Intestinal Tract P B Hadley, Kingston, R I —p 79.
48 *Acute Mercury Poisoning. Parallel Histologic and Chemical Study of Renal and Hepatic Tissue Changes as Compared with Rapidity of Absorption and Amount of Mercury Present in Circulating Blood at Time Such Changes Occur. W. H. Burmeister and W. D. McNally, Chicago —p. 87.

49 Classification of Streptococci. F. G. Blake, Boston.—p. 99.
50 Cultural and Antigenic Differences in Strains of Bacillus Typhosus and Studies in Paratyphoid Group. H. Weiss, New York.—p. 135.
51 *Bacteriologic Observations in Experimental Poliomyelitis of Monkeys. E. C. Rosenow and E. B. Towne, Rochester, Minn.—p. 175.

44. **Case of Metastatic Leiomyosarcoma.**—In Gardner's patient metastases were found in the scalp, left orbit, right breast, abdominal wall, right infrascapular region, and right lumbar region. The left side showed extensive involvement of the first three ribs, apparently extending from the spinal column. Heart: aortic stenosis and microscopic focus of tumor cells in the myocardium. Lungs: numerous metastases scattered throughout the entire substance of both lungs. Liver, kidney and pancreas, numerous tumor nodules. Pelvis: in the position of the broad ligaments were large, nodular masses. Spinal cord: tumor in the upper dorsal region. The patient was 55 years of age. She had been ill four years.

47. **Goblet Cells in Protozoan Infections.**—Hadley presents observations which demonstrate that, in the case of the flagellate protozoan, trichomonas, the cause of an acute malady of several species of birds, notably the turkey (blackhead), the avenue of invasion of the subepithelial tissues is the goblet or chalice (gland) cells located in the fundus of the crypts of Lieberkühn. It is suggested that the passage of the parasites through these cells is not inadvertent, but due to a natural invasive power present in the motile flagellate trophozoite which accomplishes the infection of the deeper tissues.

48. **Acute Mercury Poisoning.**—The experiments made by Burmeister and McNally showed that mercury can be detected chemically, frequently quantitatively, in the blood of animals poisoned with mercuric chlorid, within a very few minutes after it is administered. Degenerative changes, leading to individual cell death, take place rapidly in the kidney and occur simultaneously with the presence of mercury in the circulating blood. In massive intoxication immediate renal changes vary with the size of the dose. Hepatic changes vary as the duration of the intoxication. In smaller doses renal changes vary as the duration of the intoxication. The degree of renal or hepatic degeneration does not necessarily vary directly as does the amount of mercury contained in the circulating blood.

51. See The Journal, April 14, p. 1122.

Kentucky Medical Journal, Bowling Green

April, XV, No. 4

52 Case of Epilepsy. F. M. Stites, Hopkinsville.—p. 155.
53 Acute Anterior Poliomyelitis. W. W. Durham, Hopkinsville.—p. 157.
54 Id. G. Purdy, New Liberty.—p. 158.
55 Cyst of Pancreas. F. L. Koontz, Louisville.—p. 160.
56 Vaccines as Prophylactic and Therapeutic Agents. G. H. Sherman, Detroit.—p. 162.
57 Christian Ethics. E. K. Pike, Falmouth.—p. 166.
58 Transmission of Disease by the House Fly. K. V. Menefee, Cincinnati.—p. 169.
59 Medical Ethics. J. H. S. Morrison, Cumberland Gap, Tenn.—p. 173.
60 Medicine vs. Surgery. C. W. McCollum, Erlanger.—p. 176.
61 Influence of Mouth Infections on Systemic Diseases. J. T. Glenn, Covington.—p. 178.

Laryngoscope, St. Louis

March, XXVII, No. 3

62 Nature and Control of Hemorrhage in Nasopharyngeal Operations. J. Weinstein, New York.—p. 145.
63 Left Handedness as Etiologic Factor in Speech Defects. M. K. Scripture, O. Glogau and A. H. DeBra, New York.—p. 157.
64 Tuberculosis of Larynx and Mouth. W. W. Carter, New York.—p. 170.
65 Chronic Stenosis of Larynx, Tracheotomy; Decanulation after Period of Eighteen Years. C. J. Imperatori, New York.—p. 172.
66 Case of Septic Arthritis Following Submucous Resection of Nasal Septum. C. J. Imperatori, New York.—p. 174.
67 Osteomyelitis of Sinuses of Nose, Complicating Scarlet Fever. H. L. Lynah, New York.—p. 176.
68 Calomel Fumigations in Treatment of Constitutional and Local Conditions. E. J. Brown, Minneapolis.—p. 181.
69 New Safety Pin Closer for Endoscopic Use. H. Arrowsmith, Brooklyn.—p. 187.
70 Two Unusual Cases of Mastoid Disease with Severe Complications; Operations; Recoveries. J. C. Keeler, Philadelphia.—p. 188.
71 Fracture of Tympanic Plate of Temporal Bone. J. C. Keeler, Philadelphia.—p 192.

Medical Record, New York

April 7, XCI, No. 14

72 Treatment of Acute Stage of Poliomyelitis from Neuro-Orthopedic Standpoint. I. Strauss and P. W. Nathan, New York.—p. 575.
73 Kidney in Obstetric Eclampsia. W. A. N. Dorland, Chicago.—p. 579.
74 Diagnosis of Syphilis of Nervous System. E. L. Hunt, New York.—p. 581.
75 Habit Postures in Relation to Pelvic Conditions. E. M. Mosher, Brooklyn.—p. 583.
76 Some Modern Phases of Psychology. H. W. Wright, San Francisco.—p. 584.
77 Relation of Roentgenography to Diagnosis and Therapy of Nontuberculous Diseases of Lungs and Pleura. H. Lilienthal, New York.—p. 587.
78 Study of Relation of Volition to Management of Drug and Alcoholic Addictions. C. B. Pearson, Arlington, Md.—p. 589.
79 Syringe Piston. W. V. Gage, Worland, Wyo.—p. 491.

New York Medical Journal

April 7, CV, No. 14

80 Modern Conception of Inebriety. M. S. Gregory, New York.—p. 625.
81 Mentality of Alcoholic. S. E. Jelliffe, New York.—p. 629.
82 Surgery of Nasal Accessory Sinuses. G. M. Coates, Philadelphia.—p. 635.
83 Some Problems of Ureteral Surgery. W. R. Jackson, Mobile, Ala.—p. 639.
84 Incontinence of Urine in Women. W. P. Healy, New York.—p. 642.
85 Condenser Discharge; Its Use in Diagnosis and Therapeutics. F. B. Granger, Boston.—p. 644.
86 Some Phases of Intestinal Stasis and Its Treatment by Physical Measures. W. Martin, Atlantic City, N. J.—p. 645.
87 Contraindications to Use of High Frequency Current. F. de Kraft, New York.—p. 647.
88 Few Words About Liquor of Magnesium Hypochlorite. D. H. Stewart, New York.—p. 648.

Southwestern Medicine, El Paso, Texas

March, I, No. 3

89 Consideration Aside from Appendectomy in Surgery of Appendix. J. Vance, El Paso.—p. 13.
90 Kanavel Tube, Valuable Adjunct in After-Treatment of Abdominal Surgery. F. W. Noble, Tucumcari, N. M.—p. 17.
91 Nomenclature of Tuberculosis. W. W. Dill, Albuquerque, N. M.—p. 31.
92 Pellagra in Rio Grande Valley. W. F. Wittwer, Las Lunas, N. M.—p. 27.
93 Acute Catarrhal Jaundice in Childhood. J. A. Rawlings, El Paso.—p. 36.
94 Hay Fever in Southwest. E. R. Carpenter, El Paso.—p. 39.
95 Public Health Organization. C. C. Pierce, San Francisco.—p. 43.

United States Naval Medical Bulletin, Washington, D. C.

April XI, No. 2

96 *Intravenous Administration of Concentrated Solutions of Soluble Quinin in Malaria and Hemoglobinuric Fever. A. D. McLean.—p. 135.
97 Cases of Hemoglobinuria in Haiti. R. A. Torrance and F. H. Bowman.—p. 141.
98 Quinin and Malaria. W. H. Michael.—p. 150.
99 Mechanical Devices for Ventilation and Air Renewal on Submarine Balilla. J. S. Taylor.—p. 156.
100 Complement Fixation Test for Syphilis Using Human Complement. S. B. Myer.—p. 175.
101 Advisability of More General Use of Wassermann Test in Service. G. F. Clark.—p. 177.
102 *Wright's Solution in Conjunction with Argyrol in Treatment of Gonorrhea. C. H. Dragoo.—p. 179.
103 *Intravascular Injection of Oxygen. J. J. A. McMullin.—p. 181.
104 Iodized Catgut; Drying, Sterilizing and Storing. M. M. Robinson.—p. 219.
105 *Simple Method for Fixation of Thorax. W. A. Brams.—p. 220.
106 Adjustable Head Rest. C. B. Camerer.—p. 221.
107 Case of Megacolon. L. W. Johnson and C. W. Depping.—p. 223.
108 Accidental Explosion of Six-Pounder Projectile while Held in Hand. E. P. Huff.—p. 224.
109 Case of Bichlorid of Mercury Poisoning with Suicidal Intent. F. W. F. Wieber.—p. 226.
110 Gonorrheal Proctitis; Report of Two Cases. W. W. Cress.—p. 228.

96. **Quinin in Malaria and Hemoglobinuric Fever.**—In order to prevent alarming reactions in debilitated patients, McLean says that quinin intravenously must be given in concentrated solutions, that is, 10 to 15 mils, and not in dilute solutions of 200 to 300 mils. In malaria and blackwater fever the use of concentrated solutions of quinin intravenously is the method par excellence. Under ordinary precautions and sterile technic the concentrated solution is practically free from danger. The attack can be cut short and terminated, the patient saved much suffering and discomfort, and in a military service much saving of money, time and services to the government can be made. The results obtained are sufficient to make it not only

a safe method but by far the quickest and surest way of eliminating the malarial organisms from the system.

102. **Wright's Solution in Gonorrhea.**—Irrigations of Wright's solution with injections of argyrol (10 per cent.) have been combined by Dragoo in the treatment of acute gonococcic infections of the urethra. The many small glands which line the urethra act as a trap for the germs in gonorrhea and make local treatment very unsatisfactory. The osmosis resulting from the irrigations would seem to flush out these glands and mechanically remove the gonococci, while the injections of argyrol serve as a germicide for any remaining cocci which resist the flushing process. The irrigations were given, with the patient sitting on a chair, with a soft rubber catheter which had been perforated in many placed for about 2½ inches of its length. This was inserted into the urethra and attached to an irrigator, with the solution flowing about as in the Murphy drip method of proctoclysis. There was no pain connected with this treatment.

103. **Intravascular Injection of Oxygen.**—The experiments reported by McMullin demonstrated that oxygen can be introduced freely into the circulating blood, and that such injections are not necessarily fatal.

105. **Fixation of Thorax.**—The method described by Brams is said to have all the good features of strapping the thorax, with the following additional advantages: It is easily applied and removed, does not irritate the skin, can be adjusted to any chest and with any degree of tightness, is simple and inexpensive, and acts as a splint for the entire circumference of the chest to which it is applied. The appliance consists of a piece of canvas about 30 inches long and about 9 or 10 inches wide. The length should be about 6 inches less than the circumference of the chest. Six eyelets are placed at each end. A pad of gauze is placed under the lacing and eyelets, and the appliance is laced as tightly as may be necessary. No slipping occurs if care is taken when first applied. It may be loosened or tightened at will, without discomfort to the patient, or it may be removed periodically to permit of an alcohol rub or other local treatment.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

March 17, I, No. 2933

1 *Effects of High Explosives on Ear. J. G. Wilson.—p. 353.
2 Results of Scopolamin-Morphin Treatment During Labor in One Hundred and Fifty Consecutive Cases. W. O. Greenwood.—p. 355.
3 Intravenous Injection of Hypochlorous Acid in Treatment of General Sepsis. J. S. Fraser, A. Campbell and E. D. D. Dickson.—p. 357.
4 Case of Acute Hemorrhagic Pancreatitis, Laparotomy; Recovery. G. W. K. Crosland.—p. 359.
5 *Appendicitis Consequent on Acute Pharyngitis. C. Bennett.—p. 360.
6 Use of Bismuth Iodoform Paste After Bone Grafting. H. S. Brander.—p. 360.
7 Case of Gas Gangrene Associated with B. Edematiens. E. J. Dalyell.—p. 361.
8 Recent Cases of Dysentery. F. H. Edgeworth.—p. 362.

1. **Effects of High Explosives on Ear.**—In considering deafness due to high explosive, Wilson says, one should not only avoid the term "shock," but also so far as possible the terms "hysteria" and "neurasthenia." The cases that are admitted to the hospital suffering from "nerve deafness due to shell concussion" can be divided into three groups: 1. Those with nerve deafness. 2. Those who have had nerve deafness of a varying degree, and who have still the fixed idea that they cannot hear. 3. Malingerers. It is with the first group that this paper is concerned. The cases of nerve deafness which have come under Wilson's observation are divided as follows: 1. Cases of nerve deafness associated with damage to the conducting mechanism. 2. Cases of nerve deafness without any visible or demonstrable lesion in the conducting mechanism when they came under observation. 3. Cases of nerve deafness in which there has been destruction of the cochlea and of the semicircular canals or their nerves. In each of the first two groups the loss may be partial or total; the third always causes total loss.

The symptoms associated with loss of hearing from high explosives fall within that group of nerve diseases called traumatic neuroses. In many cases there is a recognizable physical trauma in the head or elsewhere received during a period of mental excitement. The symptoms are varied and complex. There are present, for instance, exaggeration of tendon reflexes, tremors, vasomotor disturbance, sweatings, lethargy, sleeplessness and headaches. There is unsteady equilibrium with vertigo. There is a concentric narrowing of the field of vision. In many cases fields of anesthesia were present. In two cases of total deafness there was complete anesthesia and loss of thermal sense. In one with total loss in one ear and great diminution in the other there was anesthesia on one half of the body and hyperesthesia on the other. Speaking generally, there are here included some symptoms which are frequently grouped under the term "hysteria," others under the term "neurasthenia."

Over eighty cases of nerve deafness due to high explosives were examined and treated. Prognosis is good as a rule, especially in cases in which there is no trauma demonstrable in the peripheral organ, and a normal caloric reaction. The most noteworthy exception met with so far is damage to the seventh nerve. In these cases hearing returns but slowly, and, so far as observed, not perfectly, even with a normal drum membrane, little if any signs of middle ear inflammation, and a caloric reaction present. As the deafness diminishes there may persist for a long time an inability to grasp intelligently what is said or to retain the memory of it. Thus a word may have to be repeated two or three times before the patient gets it; or, if he be asked to repeat two or three numbers given consecutively, he will repeat the last one; he knows that there were others but did not get them.

5. **Appendicitis Consequent on Acute Pharyngitis.**—By the findings in this case, both at the operation and at the subsequent histologic examination, Bennett is convinced that it is an example of infection of the appendix from an acute inflammation of the fauces and pharynx, and that the infection was conveyed by the blood stream. He believes that when the etiology of appendicitis has been determined, no one universal cause will be found; the cases will resolve themselves into a number of groups with a definite cause for each.

Indian Medical Gazette, Calcutta

February, LII, No. 2

9 Scurvy. T. C. Boyd.—p. 41.
10 Treatment of Diabetes by Alimentary Rest. E. E. Waters.—p. 42.
11 *Surgical Aspect of Ruptured Spleen; Report of Cases. P. H. Hennessy.—p. 46.
12 Gangosa; Report of Case. D. A. Turkhud.—p. 53.
13 Comparative Mortality of Towns in Nadia District. S. L. Sarkar.—p. 58.
14 *Case of Lumbar Puncture for Relief of Teething. T. Jackson.—p. 60.

11. **Surgical Aspect of Ruptured Spleeen.**—Nine cases are reported by Hennessy. All but one were cases of simple rupture caused by trauma; the exception was a stab wound. Five of the patients died. In only two cases was the tear on the external surface of the organ, while the rupture was on the internal surface in seven. In the two cases multiple injuries to the lungs and other viscera were noted. Both patients were fatally injured as the result of great violence. Of the nine cases in which a rupture occurred, two were the result of very severe injury, five patients received blows with fists, one was kicked, and one fell from a tree a height of 8 feet.

14. **Case of Lumbar Puncture for Relief of Teething.**—A strong and robust child, aged 5 months, was admitted to the hospital with a history of high fever of an irregular type and convulsions. On admission the temperature was 99 with rapid pulse and respiration. There were no signs of trouble in either chest or abdomen. In the evening the temperature was 104, there was restlessness, and it was quite evident the gums were teasing the patient. The provisional diagnosis of "pyrexia due to teething" was made. The usual remedies adopted in such case were employed, but without much success in relieving the symptoms. Though the gums were inflamed, it was not thought advisable to lance them as the teeth were not near the surface. The temperature came to

normal after ten days' irregular course, with occasional attacks of convulsions, and remained normal for five days, when the pyrexia returned. It was of the same type as before and complicated by convulsions. There now appeared retraction of the head, and, thinking there might be cerebrospinal trouble, Jackson decided on performing lumbar puncture. About 4 c.c. of cerebrospinal fluid were withdrawn and 2 c.c. of normal saline injected into the spinal canal. Beyond being slightly blood tinged, to the naked eye the cerebrospinal fluid appeared normal and proved to be sterile and otherwise normal on both microscopic and cultural examination. On the day following the lumbar puncture the temperature became normal and remained so till discharge from the hospital a fortnight later. Since the patient was discharged from the hospital until quite recently there was no return of fever or convulsions. Jackson thinks it is not unreasonable to assume that the trouble was cerebrospinal irritation due to teething and that the withdrawal of a small amount of cerebrospinal fluid in some way relieved the irritation and consequently the symptoms.

Lancet, London

March 17, I, No. 4881

15 *Modern Aspects of Heart Disease. G. A. Sutherland.—p. 401.
16 Anthrax; Simulating Cerebrospinal Fever. R. J. Reece.—p. 406.
17 *Latent Period in Acute Perforations of Stomach or Duodenum. D. Kennedy.—p. 410.
18 Mechanical Supports in Plastic Surgery. H. D. Gillies and L. A. B. King.—p. 412.
19 Plastic Repair in War Injuries to Jaw and Face. P. P. Cole.—p. 415.
20 *Antibody Content of Cerebrospinal Fluid in Meningococcal Infection, with Special Reference to Vaccine Treatment. F. E. Taylor. —p. 418.

15. **Modern Aspects of Heart Disease.**—Sutherland cites several cases of acute development of auricular fibrillation and rapid cardiac failure. One of these was a man, aged 46 years, who was admitted to the hospital in a state of extreme respiratory distress. The history was that the same morning, about 8 o'clock, he had complained of a painful feeling of tightness in his chest. This was followed almost immediately by difficulty in breathing, which gradually became worse, until he was unable to move or exert himself in any way. The patient was breathing with extreme difficulty, unable to lie down, and the respirations were slow, with prolonged wheezing expiration. The face, lips and hands were cyanosed. The pulse was feeble and irregular, at the rate of 130 per minute, beats of different strength being mixed up in a hopeless jumble. A pulse tracing showed this well. A venous tracing could not be taken owing to the overaction of the neck muscles. The history subsequently obtained was that the patient had had rheumatic fever thirty years previously, and had been discharged from the navy fifteen years previously because of heart disease. Since then he had been driving a two-horse van, a form of occupation sufficiently arduous. He had had no cardiac symptoms until three weeks previously, when, while lifting a heavy weight, he was seized with a severe pain across his chest and in the left arm, the power of which was lost. He recovered entirely in three days and resumed work, which he continued until seized with the present attack.

When the respiratory distress had quieted down it was possible to make out the cardiac condition. The rate had slowed down under treatment but the action was still irregular. The presence of auricular fibrillation was demonstrated by means of electrocardiograph and polygraph tracings. The heart was much dilated and there were some powerful beats felt, among many weak ones. The signs of mitral and aortic regurgitation were present. As is usual in such cases, rapid relief from all distressing symptoms soon followed after the heart was slowed, and the patient was able to be up and about. The condition of auricular fibrillation persisted during the following two years, after which the patient passed from observation. During this time the patient was always free from urgent cardiac symptoms when his heart rate was controlled by digitalis.

Sutherland states that formerly such an attack of cardiac failure would have been described as due to "broken compensation," and would now be described as due to "the onset of an abnormal rhythm," which in this case was auricular flutter or fibrillation. The term "broken compensation" did not convey much information as to the cardiac changes, and so treatment was guided by the general signs and symptoms—an empirical treatment, even if often singularly successful. Now treatment is directed to the cardiac changes, and more especially to the effect which these produce on the efficiency of the left ventricle. The term "failure of compensation" is wrong in such cases, because the compensatory changes have not broken down. The compensatory changes which have automatically taken place in the heart under these conditions do not break down at the onset of an abnormal rhythm like auricular fibrillation. They are there, and are still efficient if given suitable conditions for their action. This is shown by the fact that if the abnormal rhythm ceases, or if its effects are removed by treatment, the compensatory changes are found to be as efficient in carrying on the circulation as they were before.

17. **Latent Period in Perforations of Stomach.**—To look at these cases of perforation from a proper standpoint, Kennedy says, one must remember that an interval varying in length elapses between the two acts of the tragedy—first the perforation, then peritonitis; and that for treatment to be successful interference must take place before the second act is staged, or, at all events, before it is long in existence. Consequently, early diagnosis is essential. Kennedy considers it convenient to divide the course of events as regards symptoms and signs into three stages; (1) the stage of shock and collapse, (2) the stage of reaction, (3) the stage of diffuse peritonitis. It is frequently during this time of reaction or latent period that the medical attendant first sees the patient after the attack has begun. Consequently his difficulty of diagnosis. How, then, is the diagnosis to be made? (1) from the history of the attack; (2) an increasing pulse rate without corresponding increase in temperature; (3) localized rigidity of the abdominal muscles; (4) localized abdominal tenderness; (5) beginning abdominal distention.

20. **Antibody Content of Cerebrospinal Fluid.**—From a consideration of experimental results Taylor concludes that the weight of evidence goes to prove that bacterial antibodies do not pass over, at least in any quantity, into the cerebrospinal fluid, and that therefore little benefit can be expected to result from the subcutaneous administration of vaccines in cerebrospinal meningitis.

Medical Journal of Australia, Sydney

March 3, I, No. 9

21 *Peculiar Blue Spot Eruption in Soldiers. H. Lawrence.—p. 180.
22 Dermatology on Active Service with Royal Army Medical Corps. R. R. Wettenhall.—p. 181.
23 Duodenal Ulcer Complicating Burns in Infant. I. E. Ashby. —p. 183.

March 10, No. 10

24 Medical Experiences in War Zone. E. T. C. Milligan.—p. 201.
25 Prostatectomy under Local Anesthesia with Narcosis. W. R. Groves.—p. 203.
26 Carbuncle. J. F. Mackenzie.—p. 204.
27 Jaundice in Early Syphilis. G. V. Hickey.—p. 205.

21. **Peculiar Blue Spot Eruption in Soldiers.**—Four cases are reported by Lawrence, in each of which there was an elevation of temperature, varying from 101 to 103 F.; this feverish period lasted about three or four days. On the temperature becoming normal the patients felt comparatively well. From two of the patients meningococci were obtained from the throat; but none of them developed symptoms of cerebrospinal meningitis. A rash appeared on the second or third day. The eruption was macular in type, the individual lesions being of a slate blue or steel gray color, and not palpable, giving rather the appearance of a depression in the skin. The macules varied in size from that of a split pea over the abdomen to that of a sixpenny piece on the lumbar regions and the back of the thighs. The eruption appeared on the abdomen and sides of the chest, small of the back, the buttocks, back and front of the thighs. It was not accompanied by any symptoms. It appeared quickly over the parts mentioned; only a few spots developing later. The spots did not disappear on pressure, although they did not become more evident under pressure with convex glass, as is the

case of purpuric spots. The spots remained of the same color for several weeks (three or four), and then gradually disappeared, some being still noticeable up to the seventh or eighth week.

Sei-I-Kwai Medical Journal, Tokyo

March, XXXVI, No. 3

28 Spinal Anesthesia for Laparotomy. M. Suga.—p. 15.
29 Disinfective Power of Iodin. Y. Takaki.—p. 16.
30 Clinical Experiences of Cyanocuprol. Z. Inoue and K. Hanaoka. —p. 17.

Bulletin de l'Académie de Médecine, Paris

March 13, LXXVII, No. 11, pp. 345-374

31 *Discussion of Measures for Welfare of Factory Workers' Nurslings. (Vœux relatifs à la protection maternelle et infantile dans les usines de guerre.) Doléris and others.—p. 354.
32 Rebuilding the Face after War Wounds. (Des autoplasties en jeu de patience.) H. Morestin.—p. 371.
33 Relapsing Fever in Serbia. (Contribution à la pathologie des Balkans. II.) C. J. Duchamp.—p. 372.

31. **Welfare Work for Factory Mothers.**—After six weeks of discussion of practical measures to recommend to the authorities to protect pregnant factory workers and their nurslings, the Académie finally voted resolutions asking that prospective and nursing mothers in factories, especially munitions factories, should be given work requiring only moderate effort in form and duration. All kinds of work exposing to slow or abrupt traumatism, entailing fatigue and insufficient sleep should be proscribed for them. The half-day system, with six hours as the maximum, should be preferably applied to them, with no night work. Rest from work should be enforced for the last four weeks of the pregnancy. Opportunities for consulting a physician on the hygiene of mother and child should be provided, and the physician in charge of this service should see that provision is made for a change to lighter work or to abstention from work when he deems her work prejudicial to her own or her infant's health. A woman superintendent to look after the hygiene of the women workers should be provided in the factory, as is the custom in England. Provisions should be made for factory workers to suckle their babes, and prizes should be given to those who accomplish their duties as nurses. The pregnant and suckling women obliged by their condition to reduce or stop their work, shall receive an indemnity to compensate the reduction or loss of their wages. The expenses of this are to be guaranteed by the state, working through an *organisme de prévoyance et d'assurance*. Besides rooms where the mothers can suckle their infants, arrangements should be made for keeping the children while the mothers are at work, wherever there is need for this.

Paris Médical

February 24, VII, No. 8, pp. 153-168

34 *Medical Prophylaxis of Syphilis. Leredde and M. Rubinstein.—p. 153.
35 Device to Aid Roentgen Localization of Foreign Bodies. (Le localisateur-guide.) Gudin.—p. 155.
36 *Tardy Tetanus after Pneumococcus Infection. Maclaud and E. Lévy.—p. 163.
37 *Improved Technic for Determination of Sugar. (Dosage du glucose.) P. Vansteenberghe and L. Bauzil.—p. 164.
38 The Income Tax. (L'impot général sur le revenu.) L. Bocquet. —p. 165.

34. **Medical Prophylaxis of Syphilis.**—Leredde and Rubinstein urge the necessity for special dispensaries, with laboratory equipment, at accessible points to diagnose and treat venereal disease. As an important supplementary measure they emphasize the need of training physicians in this special field. They mention that there is a special chair of serology at Amsterdam, in charge of Sormani, and Germany, Denmark, Sweden and Norway also have provisions for teaching serology. At Moscow there is a school of serology that gives diplomas to its graduates. Mastery of the technic for and interpretation of the results of the biologic reactions require thorough training in applied serology.

36. **Tardy Tetanus after Pneumococcus Infection.**—The case reported shows that a medical infection is able to cause the flaring up of tetanus infection over a month after the wound.

37. **Potassium Cyanid Test for Sugar.**—This communication is supplementary to one published last December. The technic is further simplified.

Journal d'Urologie, Paris

1911-1915-1916, VI, No. 6, pp. 601-724

39 *Better Results with Local Anesthesia for Prostatectomy. F. Legueu.—p. 601.
40 *The Blood Findings with Enlarged Prostate May Exclude Cancer. (L'éosinophilie, peut-elle aider au diagnostic de l'adénome prostatique?) F. Legueu and L. Morel.—p. 605.
41 Vesical Concretions after Wounds of the Bladder. (Des calculs vésicaux chez les blessés de la vessie.) F. Legueu.—p. 611.
42 *Stitch Lesions in the Kidneys. (Sur les lésions déterminées par les points de suture dans le parenchyme rénal.) F. Misuraca. —p. 615.
43 *Modified Technic for Fixation of Kidney. A. Brandão, Jr. (Rio de Janeiro).—p. 631.
44 Calcareous Infarcts in the Kidney. G. Bolognesi (Bologna).—p. 639.
45 Cystoscopic Diagnosis of Neoplasms of the Prostate. L. A. Surraco (Montevideo).—p. 653.
46 *Importance of Peri-Urethral Adenoma with Stricture of the Urethra. Idem.—p. 659.
47 *Present Status of Technic for Nephrectomy. G. Marion.—p. 665.
48 *Improved Technic for Catheterization of the Ureters. (Nouvelles sondes urétérales à olive à introduction rétrograde.) M. Gudin (Rio de Janeiro).—p. 681.

39. **Local Anesthesia for Prostatectomy.**—Legueu here brings his report down to date, March, 1917, in No. 6 of the *Journal d'Urologie*. He now has a record of 150 cases of prostatectomy done under local anesthesia alone. At his first communication in the opening number of the same volume, June, 1914, he had had only fourteen cases to report. The results on the whole are much better than when the patient has to bear the strain of general anesthesia besides the prostatectomy. His mortality was only 5 per cent. This is the lowest mortality in any series of his 450 prostatectomies. In other cases, in which for any reason general anesthesia had to be used, the mortality was 10 per cent. The local anesthesia also permits prostatectomy in many cases in which it would be impossible if general anesthesia were required as, for instance, with valvular disease or bronchitis and in the obese with huge prostate. The only contraindications are irritable bladder, from cystitis or a concretion, and sclerous prostatitis without adenoma. Under other conditions, regardless of the size of the adenoma or the mode of access, local anesthesia answers every purpose. And no technic, he says, is as simple, rapid and perfect in its results as the one he uses. He makes no attempt to anesthetize the wall of the bladder directly, but he injects into the bladder 40 or 50 c.c. of a 1:200 solution of novocain, with 5 drops of 1:1,000 solution of epinephrin to each 100 gm. of the solution. He also injects the same solution into Retzius' cavity. The wall of the bladder, thus acted on by the anesthetic from within and from the preperitoneal cavity, becomes insensible so that its incision causes no sensation of pain. When the bladder is thus incised, he works two fingers of the left hand into the organ, face toward the pubis, and with these fingers he guides the long needles, bent at different curves, and injects 5 or 6 c.c. of the solution into the tissues around the enlarged prostate. The first prick with these needles is sometimes felt but not the following. He anesthetizes in the same way the regions between the rectum and the prostate, and the zone in front of the urethra. The whole operation is complete in fifteen minutes, and he has never been obliged to give any supplementary anesthetic by inhalation or in any way. He uses a total of 250 or 300 gm. of the solution and begins to operate almost at once. No by-effects or inconveniences of any kind were ever observed except a little sloughing around the incision. This he traced to the epinephrin, and since he reduced the amount from 25 to 5 drops he has never had this mishap.

40. **Eosinophilia as Excluding Cancer of the Prostate.**—Legueu and Morel noticed eosinophilia of 14 per cent. in a patient with enlargement of the glandular structure of the prostate. This was three years ago, and they have recorded the blood count systematically since in all their patients with hypertrophied prostate. In the cancer cases they found always

subnormal figures for the eosinophils while the polynuclear neutrophils were in numbers much above normal. These characteristic blood findings were not invariable however, as among 150 patients they found one case of malignant disease of the prostate with high eosinophilia, and two cases of simple hypertrophy with low. At the same time, the discovery of eosinophilia is presumptive evidence of simple adenoma. They regard 2.5 per cent. as pathologic, and they warn that various influences may affect the eosinophilia infection, the retention catheter, transient fever or hematuria may modify in a few hours the leukocyte count. The incident once past, the eosinophil count returns to its former figures. The blood count should therefore be made on a day free from fever, the catheter and hematuria. It is instructive to repeat the count every three or four days for two or three weeks. The polynuclear neutrophils are usually within normal range with simple adenoma. With cancer, they average 87 per cent. while the eosinophils average 0.4 per cent.

42. **Stitch Lesions in the Kidney Parenchyma.**—Misuraca reports the results of considerable experimental research on dogs to determine the fate of sutures in the kidneys. He compares his findings with those that have been published by others. He never found appreciable macroscopic lesions but the microscope showed along the track of each suture thread phenomena of necrosis, inflammatory reaction and sclerosis. There was also a transient circumscribed parenchymatous nephritis which reached its height in twenty-five days and then retrogressed.

43. **Improved Technic for Nephropexy.**—Brandão's method is a modification of Albarran's technic which he regards as superior to all others. But it has two drawbacks and he has suppressed these, so that the technic as he has modified it seems exceptionally rational and effectual. The drawbacks in question are the stripping of the capsule from the anterior wall of the kidney. This, he shows, is unnecessary while it entails adhesions with important organs in front. They do not help in fixation but contribute by their weight in dragging down the kidney. He avoids this by refraining from stripping the anterior wall, taking two stitches in the turned back capsule just back of the convex edge. The capsule is cut away over the larger part of the rear wall but enough is left to cover the edge all around. As the capsule is peeled off, it is divided two-thirds of the way down into halves, leaving a broad pedicle below. Each half is then tied separately with catgut to form a stout pedicle, as with Albarran's technic. If the capsule is flabby, it is better to tie it to make one pedicle instead of two. By refraining likewise from peeling off the capsule from the lower pole of the kidney, there is no danger of its tilting. Brandão reports seven cases in which he has applied this technic. The seven women were between 19 and 39 years of age. Necropsy in one case after appendicitis showed the kidney was fastened rather low. This woman of 33 had complained of abdominal pains, vomiting and constipation. Neurasthenia was evident also, with a suicidal tendency. No improvement followed the nephropexy. All the others were completely cured of all disturbances from this kidney. The article is illustrated.

46. **Enlargement of the Prostate in connection with Stricture of the Urethra.**—Surraco describes four cases which demonstrate the falsity of the old saying that stricture and hypertrophy of the prostate never occur together. They show that elderly persons with pronounced symptoms from stenosis of the urethra seldom have the prostate enlarged so that it can be felt through the rectum. It is usually enlarged, however, but it protrudes into the urethra or bladder. After the stricture has been conquered, symptoms on the part of the prostate may become manifest. They may have existed before and been masked by the symptoms from the stenosis.

47. **Technic for Nephrectomy.**—Marion's description of the usual methods of nephrectomy is accompanied by seven illustrations.

48. **Segregation of the Urine from Each Kidney.**—Gudin remarks that if any urine escapes along outside the catheter in the ureter, our estimation of the kidney functioning is liable to be based on mistaken premises, as he explains in detail. To obviate this he has his ureter catheters made with a long olive, broader in diameter than the cystoscope, and introduced backward into the latter. The article is illustrated.

Progrès Médical, Paris

February 24, XXXII, No. 8, pp. 61-68

49 *Paraffin-Film Treatment of Wounds. (Service de l'ambrine.) B. de Sandfort.—p. 61.
50 *Case of Paratyphoid A plus Typhoid. (Cas de paratyphoïde A avec rechute en infection éberthienne.) P. Gérard and Fenestre.—p. 65.
51 *Iodoform Mixture for Spraying Wounds. (De l'emploi de la méthode de Mencière.) Cheyrou.—p. 66.
52 Importance of Vegetation for Human Physiology. (Le rôle physiologique de la végétation.) A. Satre.—p. 67.

March 3, No. 9, pp. 69-76

53 Extraction of Projectiles in the Chest. A. Binet and F. Masmonteil.—p. 69.
54 *Intermittent Fever of Syphilitic Origin. A. Vahram.—p. 72.
55 *Cirrhosis of the Liver in Children. A. Satre.—p. 73.

49. See Sollmann's article in The Journal, April 7, 1917, p. 1037.

50. **Mixed Paratyphoid and Typhoid.**—The case described illustrates anew the interest and precision of the agglutination test when no germs can be found in the blood. The case warns further that with mixed infection one of the bacilli is liable to crowd out the other in the culture mediums and give atypical growth.

51. **Spray Embalming of Wounds.**—The spray used is a mixture of 10 gm. each of iodoform, guaiacol, eucalyptol and Peruvian balsam, with 100 gm. alcohol, and ether to 1,000 gm. After the surgical toilet of the wound, this fluid is sprayed forcibly into all the cavities and crevices of the wound. This takes only a few seconds; the hands do not come in contact with the wound; only a small total amount of the mixture is used, while the powerful disinfectants in the measure destroy germs and thus ward off complications. Cheyrou has found this technic, introduced by Mencière, extremely useful, especially on the firing line when the wounded are coming in in large numbers and every minute counts. The mixture has a kind of embalming effect on the tissues, and the dressing does not have to be changed until the man reaches the base hospital.

54. **Intermittent Fever of Syphilitic Origin.**—Vahram has had three cases of this kind recently, in all of which mercurial treatment was followed by complete recovery. One patient was a woman of 30 who for five months had had a daily attack of fever, coming on between 2 and 3 p. m. and lasting for several hours. Each began with a chill, the temperature ran up to 104 F. and then came sweating. Courses of quinin and arsenic had shown no effect. The second patient was a man of 40 who had had malaria for years but no manifestations of it for seventeen years. Then he began to have a chill, fever and sweating every day, the attack coming on about 3 or 4 p. m. and not terminating until about midnight. This had been going on for twenty-five days. The third patient, a man of 38, had been having fever every day toward evening, with sweats and headache. In eight months he lost nearly 27 pounds, and as he had a cough, he had been labeled tuberculous. On suspicion of syphilis the Wassermann test was applied, and the response was positive in each case. Under mercurial treatment clinically normal conditions were promptly restored.

55. **Cirrhosis of the Liver in Children.**—Satre reviews the present state of our knowledge on this subject. His attention had been attracted to it by a case personally observed in a boy of 9. No decision is possible yet as to its exact cause, but the frequency of nephritis with the cirrhosis of the liver in children suggests a common cause for each. Alcoholism and scarlet fever seem to be mainly responsible; he incriminates the former in his case. Scarlet fever is incriminated in England, but, he adds, this disease is so common there that any and every ulterior affection seems to have some more or less direct connection with it. Klein has published eight cases of cirrhosis of the liver developing immediately after scarlet fever. Measles was mentioned in six cases, but only when there was a history of scarlet fever. Palmer declares

that in about 8 per cent. of the cases tuberculosis is responsible. In Stack's twenty cases of cirrhosis of the liver in children, several were tuberculous. In seven cases on record, acute nephritis accompanied the cirrhosis. Only in two of these cases was there jaundice, and ascites was reported only in one of the seven nephritis cases. In Stack's twenty cases in children, only three were girls. The cirrhosis develops with an exceptionally rapid course in children, sometimes complete in a month, but it averaged five months. Ascites was almost constant except in two cases in which syphilis could be incriminated. The fibrous tissue develops so rapidly in children that the portal system does not have time to adapt itself to the cirrhosis, and consequently symptoms become manifest almost from the first. In one case the necropsy findings were exactly like those found in adults, but there was no trace of ascites. This case had been distinguished by nervous phenomena, loss of speech, contractures and extreme emaciation. Similar nervous phenomena were manifest in Satre's personal case described. There was only slight and transient jaundice; in some other cases jaundice did not develop until the last twenty-four hours before death. His little patient presented no complications, but the cirrhosis ran its course to a fatal termination in less than three weeks. The rarity of jaundice is a striking feature of cirrhosis of the liver in children, and seems inexplicable.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 10, XLVII, No. 10, pp. 289-320

56 *Gas Cysts of the Intestine. (Zur Lehre der Pneumatosis cystoides intestini hominis.) K. Schnyder.—p. 289.

March 17, No. 11, pp. 321-352

57 *Diarrhea in Infants from General Infections. (Ueber Durchfälle bei Sauglingen infolge parenteraler Infektionen.) Bernheim-Karrer.—p. 321.

58 *Roentgen Treatment as Adjuvant to Heliotherapy.* E. Amstad.—p. 335.

56. **Gas Cysts of the Intestines.**—In the first of the two cases described, a man of 46 who had never complained of bowel trouble died with symptoms of uremia. Necropsy disclosed that the walls of the large intestine were set thick with gas cysts, mostly in the muscle and submucosa. The intestinal emphysema was found likewise in a boy of 5 who had succumbed to diphtheria with acute myocarditis. The gas cysts were found likewise in the lymphatics of the small intestine, the mesentery and the mesenteric glands. The tendency to gas cysts has never been diagnosed during life. In some cases the gas cysts caused no symptoms, in others bowel and stomach disturbances brought the patient to the surgeon. In some cases the cysts retrogressed completely after an exploratory laparotomy. Spontaneous recovery is the rule. The proliferating lymphangitis with gas production is analogous to emphysema of the vagina and bladder.

57. **Diarrhea in Infants from General Infections.**—Karrer specifies parenteral infections as affecting the digestive tract, emphasizing the deleterious influence on the digestion of tonsillitis, influenza, pyelitis, etc. The influence seems to be more pronounced the younger the child, but even older children are liable to severe derangement from this cause. The vomiting is often ascribed to a stomach trouble, and unnecessary and harmful dietetic restrictions are imposed. As the children lose in weight the vital processes are unfavorably modified. Coccus infections seem to be the most potent in this respect. He has seen influenza induce in young infants phenomena suggesting dysentery or cholera, even without much catarrh of the upper air passages. This may occur in epidemic form in institutions, and simulate food poisoning. The infants affected are always the youngest or those with digestive disturbance. More frequent than this dysentery form is simple dyspepsia, and this may persist after recovery from the influenza. The severity of the gastro-intestinal disturbance may be out of all proportion to the mild general infection. The affinity of the streptococcus for the bowel mucosa is like that of the diphtheria bacillus for the motor nerves. He gives some charts showing the local and time incidence of the gastro-intestinal disturbances in three infant wards. Over half of the nineteen infants developed bowel trouble. Treatment should be along the same lines as for digestive disturbances of alimentary origin. The lack of substitute nurses in his institution (Zurich) renders it impossible to exclude from the service every nurse who develops a catarrhal "cold." It is impossible also to exclude visitors. New buildings should be provided with glass partitions to keep the visitors from direct contact with the children. In house practice we must protect infants less than a year old against infections, and especially those with unstable digestive apparatus. But it is difficult to keep infection away from infants even in luxurious homes, and diarrhea from parenteral infection is common in the crowded homes of the poor.

As, in his experience, streptococci were found most frequently in grippe, he vaccinated the infants with an antistreptococcus vaccine when grippe appeared in the institution. Only 9 of the 28 vaccinated children escaped the infection; 9 developed grippe but in 7 it was very mild, with no fever and no diarrhea, and in 3 others there was only an insignificant rise in temperature. Only 35 per cent. of those affected developed diarrhea and only one had much vomiting. The vaccine was borne well, without local or appreciable reaction. The vaccination was preventive in 12 cases and in 16 the grippe was already installed. In the first group seven and eight weeks elapsed before the influenza developed. He regards these tentative experiences as promising, and declares that they encourage continuation and further development of vaccination against influenza in infants.

Pediatria, Naples

February, XXV, No. 2, pp. 65-128

59 *Prophylaxis of Cerebrospinal Meningitis. E. Carapelle.—p. 65.

60 Leukotoxins in the Blood Stream in Internal Leishmaniosis. S. Maggiore and M. Sindoni.—p. 81.

61 Present Status of Polyserositis. (Ascite epato-pericardica di origine polisierositica.) C. Martelli.—p. 89.

59. **Prophylaxis of Cerebrospinal Meningitis.**—Carapelle writes from Palermo that the mortality in a recent epidemic of meningitis there was 92 in 158 cases, but the larger proportion of the deaths occurred in the home; 38 died of 48 meningitis patients treated at their residence. Only 33 per cent. of the total cases were in adults; 16 cases were in infants less than a year old, 49 between 1 and 6 years, and 52 between 6 and 15. The meningitis was generally preceded by an epidemic of influenza, pneumonia or catarrh. Fatigue and overcrowding enhance the predisposition. Carriers seem to be mainly responsible for transmission of the disease. Those in direct attendance on the sick transmit the germs to other carriers, and thus link by link a long chain of carriers is formed. Isolation of the sick in a public hospital or contagious diseases hospital is of extreme importance as it not only prevents the starting of the chain of carriers, but because the patient gets specialist and systematic care. When cases develop in an institution or barracks it is advisable to move into a temporary camp for eight or ten days and to insist on repose for all who have inflammatory lesions in the nose or throat. Search for carriers in the civilian population is fruitless and useless. The reliance in treatment is on the specific antiserum given by intraspinal injection. It should be made in some laboratory on the spot. He gives a map showing the incidence of the disease at Palermo, commenting on the widely scattered cases and the greater number in the more crowded quarters.

Policlinico, Rome

March 4, XXIV, No. 10, pp. 305-336

62 *Appearance of Trichinosis in Italy. (La comparsa della trichina spiralis in Italia.) G. Volpino.—p. 305.

63 Pneumothorax from Tearing of Old Pleural Adhesion. G. L. Fiori.—p. 306.

64 Slight Clinical Importance of the Permanganate Reaction in Urine of the Tuberculous. (La reazione di Moritz-Weisz nelle urine dei tuberculosi.) C. Lollini.—p. 308.

65 Necessity for Services of Dentists for the Troops. (L'odontoiatria potrebbe ridare all' Esercito piu di centomila uomini, ora riformati o dichiarati inabili alle fatiche di guerra.) A. Chiavaro.—p. 311.

February, Medical Section No. 2, pp. 53-100

66 *Generalized Echinococcus Disease.* (Cisticercosi umana generalizzata. Ricerche cliniche, chimiche e serologiche.) A. Roccavilla.—p. 53.

67 *Vaccine Therapy of Typhoid. IV. V. Pensuti.—p. 83.

62. **Trichinosis in Italy.**—Volpino relates that for some years there have been no reports of the finding of trichina in Italy. But recently there have been quite a number of cases in the Bergamo district. He warns that during war time hygienists should be on the lookout for unusual germs, in addition to the ordinary ones, to protect the country against imported scourges.

67. **Vaccine Therapy of Typhoid.**—Pensuti here presents his fourth report on his experiences with vaccine therapy of typhoid. He began this treatment in 1913 and soon became convinced that better results were obtained with small daily doses of the vaccine. There is a great difference, he says, between the response in the healthy and in the typhoid patient. In the latter the defensive forces of the organism are already mobilized and at work, and hence it is not necessary to give it time to develop antibodies; the vaccine should be given without longer intervals than twenty-four hours. The typhoid patient shows no reaction to the injection except possibly transient rise in temperature. Another principle he proclaims is that the vaccine therapy is not distinct from the natural defense the body is offering the infection but is of the same nature as this. The dose of vaccine can be reduced the more advanced the disease. The body has already very nearly enough antibodies by this time; only a very small amount of the vaccine is needed to bring the total to the effectual point. He regards the relapse as merely one and the same disease, a latent period having intervened. For this reason he keeps up very small doses of the vaccine after defervescence to ward off a possible relapse. Vaccine therapy must be applied only after studying subject by subject and infection by infection, being guided in the dosage by the fever curve, the stage of the infection and the response to treatment, thus continuing, suspending or resuming it in accordance with the individual conditions. He cites a number of cases which sustain the assumption that the vaccine has some chemical action neutralizing the toxins. Late or lacking agglutination was frequently noted in those refractory to the vaccine therapy. He noticed also that over 50 per cent. of those refractory to the vaccine therapy developed suppurative processes.

Riforma Medica, Naples

January 27, XXXIII, No. 4, pp. 85-112

68 *The Blood Findings after Vaccination against Typhoid in the Healthy and in Those with Typhoid. F. Ravenna.—p. 93. Commenced in No. 3, p. 65.

69 *Epidemic Cerebrospinal Meningitis. U. Gabbi.—p. 98. Commenced in No. 2, p. 38.

70 Intoxication from Asphyxiating Gases in War; Eighty-Two Cases. G. Gallo.—p. 100.

February 3, No. 5, pp. 113-140

71 *Epidemic Cerebrospinal Meningitis. M. Cassella.—p. 119.

72 Present Status of Synkinesia and Associated Reflexes. A. Ferrannini.—p. 129.

February 10, No. 6, pp. 141-168

73 The Medical Sciences in Italy. (Rinnovamento.) A. Ferrannini. —p. 141.

74 *Technic and Interpretation of the Findings of Roentgen Examination. (Lezioni di radiologia medica.) M. Bertolotti.—p. 143. Commenced in No. 1, p. 1.

75 Paralysis of Hand, Fingers or Arm after Minor War Wound. C. Pastine.—p. 149.

68. **The Blood Findings after Vaccination against Typhoid.**—Ravenna tabulates the blood findings in thirty healthy men from two to ten months after vaccination against typhoid, as also the average immediately after the vaccination. It seems to affect the blood much as does actual typhoid, but the blood gradually returns to normal, the different elements recuperating after different intervals. The proportion of neutrophil polynuclears persisted low for several months in about half the patients, and in 50 per cent. of the men the eosinophils were within normal range; in 33 per cent. they were below 2 per cent. and in 20 per cent. above 5 per cent. The lymphocytes were above normal in 50 per cent., and below in 16 per cent.

69. **Epidemic Cerebrospinal Meningitis.**—Gabbi says that among the affections liable to be confused with epidemic cerebrospinal meningitis are tetanus, tuberculous meningitis, malaria of the pernicious type with convulsions, influenza of the cerebral type, and the meningitic form of acute pneumonia. Tuberculous meningitis usually develops more insidiously, and the tuberculin reaction and profuse sweats aid in differentiating, as a rule, the tuberculous and epidemic types. In malaria, there is generally enlargement of the spleen. With influenza, the catarrhal condition of the upper air passages suggests the true nature of the trouble. Inquiry as to other cases of meningitis in the neighborhood may disclose its epidemic form. In case epidemic meningitis is suspected, the patient should be isolated without waiting for absolute certainty, and carriers should be sought in the environment. Some recent experiences in the troops during an epidemic demonstrated that the epidemic died out on removing the troops from an infected barracks and living in tents for a time. Formaldehyd seems to have proved the most effectual disinfectant. Serotherapy is lauded by some, while others have had disappointing results. Gabbi declares the difference in results probably was due to the difference in strains of the meningococci. The homologous serum should be used whenever possible. Pellegrino says that the dosage should be proportional to the severity of the case.

71. **Epidemic Cerebrospinal Meningitis at Naples.**—Cassella reviews the recent epidemic of meningitis at Naples, a total of 171 cases, nearly all in the winter and spring of 1915 and of 1916. The mortality was over 58 per cent. in the first period and over 51 per cent. in the second. No case of familial contagion, he says, was known, the experiences in this epidemic confirming the assumption that cerebrospinal meningitis is a disease that is rarely propagated by the sick. Bellei thinks that the explanation of this is that during the period in which the germs in the nasopharyngeal secretions are virulent, the patient is usually in a comatose state, not speaking nor sneezing nor coughing, and thus not scattering the germs about him. Cassella's patients, however, were seldom comatose, and one attendant, at least, in waiting on them, became a carrier. One of the patients was a teacher, but no cases developed among his pupils, showing that the prodromal stage is not infectious. Cassella examined 412 of the soldiers to detect carriers, and found 3.9 per cent. harboring the germs. These were isolated at the military hospital until negative findings. None of them developed meningitis. He thinks it probable that the meningococcus acquires special virulence in a case of meningitis and thus sets up a new train of carriers. These feel no bad effects from them until their resisting powers become depressed from any cause; then they are liable to develop the disease. The healthy carriers of the virulent germs are not numerous, and the germs lose their virulence before long. After a few sporadic cases and a long interval, suddenly the disease may develop in epidemic form, the cases widely scattered. No other disease, he declares, shows so plainly the influence of some special conditions affecting the germs themselves, to enhance their virulence, and affecting the individual predisposition. Many of the first cases were in new recruits. The changed mode of life and fatigue from the military training may have cooperated in enhancing the predisposition. In the civilian population the cases were almost exclusively in the poorer classes. He gives a chart showing weather conditions, but no connection is apparent between them and the epidemic. The severer cases were all in the earlier period.

74. **Medical Radiology.**—This is the sixth and last instalment of Bertolotti's study of the technic and interpretation of the findings in Roentgen examination of the spine and chest, especially with congenital anomalies of the skeleton. A number of typical cases are described, with the Roentgen findings. He urges the importance of study of the normal and pathologic anatomy as shown in roentgenograms. This is indispensable for the orthopedist, especially study of the laws governing the formation of bone, and the numerous deviations from these laws in congenital anomalies of the skeleton.

Brazil-Medico, Rio de Janeiro

February 17, XXXI, No. 7, pp. 51-62. Cruz Memorial Number

76 Life and Work of Oswaldo G. Cruz. C. Chagas and others.—p. 51.

February 24, No. 8, pp. 63-72

77 Brazilian Beetles. II. (Tetrameridae brazileiras.) L. Travassos. —p. 65.

March 3, No. 9, pp. 73-80

78 Brazilian Endoparasitic Nematode Worms. V. (Trichostrongylinas brazileiras. Oswaldocruzia n. gen.) L. Travassos.—p. 73.
79 Heliotherapy in Brazil. A. Moncorvo Jr.—p. 74. Continuation.

Siglo Medico, Madrid

March 3, LXIV, No. 3299, pp. 129-144

80 *Clinical Value of the Determination of Pepsin in the Stomach Content. T. Hernando and T. Alday.—p. 130. Commenced in No. 3298. p. 114.
81 *Correction of Facial Deformities. (Las restauraciones bucofaciales.) D. F. Aguilar.—p. 138. Commenced in No. 3296, p. 90.

80. **Clinical Importance of Determination of Pepsin in Stomach Content.**—Hernando and Alday found the Mett technic most exact and the Fuld-Levison the simplest, but for practical purposes, they say, Boas' method is sufficiently reliable. They report that in 10 cases of anachlorhydria, pepsin was found always present in their tests although in proportions much below normal, and not paralleling the hydrochloric acid content. Each should be determined separately in watching over the progress of a stomach affection. In 10 cases of noncancerous hypochlorhydria, the proportion of pepsin was unusually low in some but normal in others. In 22 cases of gastric cancer, no pepsin could be detected in 3 cases by the Mett technic; in 16 only small amounts; in one it was normal and in 2 above normal. With the Fuld method in 29 cases no pepsin could be found in 6 cases, very little in 21, and the findings were normal or above normal in one case each. In 18 cases there was a deficit of hydrochloric acid and in 6 it was present only in moderate amounts. In 30 cases of hyperchlorhydria (Mett) the pepsin content was normal or subnormal in 4 cases each and in 22 above normal. With the Fuld technic, in 35 cases, it was normal in 12 and above the normal range in the others.

In all the 37 gastric or duodenal ulcer cases, and in 34 of 35 (Mett) cases and in 48 of 50 (Fuld) cases of cicatricial stenosis of the pylorus, the pepsin was much above normal. Hence this finding should suggest the possibility of an ulcer. It is possible that in some of the hyperacid cases with high pepsin content there may have been some undetected ulceration. Certain measures known to influence ulcer favorably may owe their efficacy to their action on the pepsin, rather than on the acidity, to which it is generally attributed. This applies particularly to sodium chlorid which seems to have an inhibiting influence on pepsin. Inert powders, to adsorb it, have a similar inhibiting action. Their experience indicates that the pepsin content may aid in the prognosis with hyperchlorhydria, the outlook being better when the pepsin content is low. They warn that pepsin should never be given alone or with an alkali. It requires an acid medium to be effectual. In chronic gastritis of the catarrhal type, tending to atrophy, they found the pepsin content low as a rule.

81. **Correction of Facial Deformities.**—Aguilar's profusely illustrated article gives the "before and after" aspects of numerous cases of congenital or acquired deformities, shell face, fractured jaws, etc., given treatment at the Madrid School of Odontology. He discusses various principles involved, saying that in recent years, and especially in Spain, odontology has developed into a brilliant branch of medicine.

Mitteilungen a. d. med. Fakultät der k. Univ., Tokyo

1916, XVI, No. 1, pp. 1-212. German Edition. Last indexed March 17, p. 885

82 Proportional Weights of Bones of the Feet in Different Races. (Gewichtsproportionen der Fussknochen bei verschiedenen Rassen.) K. Hasebe.—p. 1.
83 A Strain of Atypical Actinomyces. S. Yamakawa.—p. 17.
84 *Necropsy Findings in Case of Paroxysmal Hemoglobinuria. J. Idei.—p. 35.
85 Roentgen Examination of Healthy Stomach in Fifty Japanese. Y. Kato and J. Nakamura.—p. 51.
86 *Nerve Stretching. (Ueber die Nervendehnung. Experimentelle und klinische Untersuchung.) G. Takimoto.—p. 73.
87 The Physiology of the Retina and Its Behavior under Chemical and Physical Stimuli. (Zur Kenntnis der Bewegungsvorgänge in der Netzhaut.) N. Kumagai.—p. 137.

84. **Necropsy Findings in Case of Paroxysmal Hemoglobinuria.**—Idei's patient was a fish merchant of 36, and the attacks of hemoglobinuria lasted for ten days and were followed by reduction of the daily output of urine to from 8 to 40 c.c. This reduction in the amount of urine kept up for ten days, the man finally dying from anuria after one such attack. A congenital defect in the aortic valve was found at necropsy. The hemoglobin was accumulated mostly in the convoluted tubules and below, both kidneys presenting indications of acute parenchymatous nephritis.

86. **Nerve Stretching as a Therapeutic Measure.**—Takimoto devotes sixty-six pages to his account of his experimental and clinical research on nerve stretching. It is accompanied by three colored full-page plates. The latter show the histologic changes in a nerve after it has been stretched. The axis cylinder as it is stretched breaks up into short segments, with gaps between. This interrupts the continuity of the nerve almost as if it had been cut across. This segmentary interruption of the continuity of the nerve is accompanied by bleeding, hyperemia, tearing of the fibers of the connective tissue, and enlargement of the lymph spaces in the epineurium and perineurium, while the segmented nerve fibers degenerate. All the therapeutic effects of nerve stretching can thus be readily explained, he says, as due to blocking of the nerve. From the theoretic standpoint, the measure is of only palliative value, and uncertainty as to the outcome and recurrences must be counted with. At the same time, nerve stretching, properly done, is almost ideally successful in practice, especially in combating unbearable pains. It arrests them even in cases in which no other measure gives relief. He regards it as indicated in all such cases when everything else has failed and the pains are very violent, and when the functional disturbances liable to result from the nerve stretching would not be of such a nature as to entail much disturbance. It seems to be adapted to any and every affection connected with nerves. With affections of the central nervous system, pains and spasms in the periphery can be arrested by the nerve stretching, but this of course does not act on the central affection. He adds that sensory and motor disturbances at the periphery are also amenable to nerve stretching. With peripheral nervous affections, nerve stretching is indicated only in the period of irritation; under other conditions it is liable to be directly harmful. Erythromelalgia is a favorable field for nerve stretching, as this abolishes not only the pain but also the redness and the swelling. The effect realized confirms the assumption that erythromelalgia is caused by abnormal conditions in the vasodilators. The bibliography appended nearly all dates from 1883 or before; Neri's article on stretching the sciatic nerve is the only original article cited published in this century.

Hospitalstidende, Copenhagen

February 21, LX, No. 8, pp. 173-196

88 *Splenectomy with Certain Internal Diseases. (*Om Miltexstirpation ved Polyglobuli, Morbus Banti og Icterus haemolyticus.*) T. Rovsing.—p. 173. Commenced in No. 7, p. 149.

88. **Splenectomy for Internal Diseases.**—Rovsing remarks that removal of the spleen is a comparatively simple and harmless measure when the spleen is sound and has been injured in some accident or is the seat of some buried morbid process. Splenectomy, however, is quite a different matter when the enlarged spleen is adherent to other organs. In malaria and leukemia the results have been so disappointing, he continues, that splenectomy has certainly played out its part in these affections. In polycythemia, Banti's disease and hemolytic jaundice the outlook is more promising. He reports in detail five cases in which he removed the spleen on these indications. The first patient was a man of 42 with symptoms suggesting chronic gastric ulcer and great enlargement of the spleen. The blood count showed 9,000,000 reds and 12,500 whites, hemoglobin 105, and the Pirquet test was strongly positive. The spleen was found studded with nodules which confirmed the assumption of tuberculosis of the spleen and he removed it. Numerous adhesions made this very difficult, and persisting capillary bleeding followed to which the patient succumbed. Rovsing has been convinced by this case that splenectomy is absolutely contraindicated with polycythemia

if the spleen is adherent to other organs over any extent. Uncontrollable hemorrhage is almost certain to follow. The nodules on the spleen in his case proved to be merely infarcts, but there were calcified patches in the liver, a tuberculous focus in one kidney and a simple ulcer in the stomach.

The second patient was a man of 23 in the third, advanced, stage of typical Banti's disease, with atrophic cirrhosis of the liver and ascites. He had also had hematemesis on several occasions which had entailed extreme anemia. As splenectomy seemed to be the only chance, the patient insisted on it in spite of Rovsing's advice against it. The spleen weighed 1,725 gm. and its removal was difficult on account of adhesions, but the patient began to improve almost at once and the ascites has not returned. The man has kept well during the two months to date, and the blood picture seems to be normal. Rovsing ascribes much of the success in this case to his special incision which gives ample access with the least injury to vessels and nerves. It starts in the epigastrium on the middle line, parallels the left costal arch, 3 cm. below it, to the middle of the left rectus muscle. The incision then swings downward, slitting the upper wall of the sheath of the rectus, along its median line, until the incision reaches the level of the anterior superior spine of the ilium. Although the incision is so long, yet it is not easy to deliver the spleen through it if it has to be first separated from adhesions. He warns further that in Banti's disease the enlarged spleen may push the liver forward and thus give the impression of extreme enlargement of the liver when this is not the case in fact. He had this experience in an earlier case of Banti's disease. As soon as the spleen was removed, the liver slid back into its place and was seen to be of normal size. This latter patient died three months after the operation from thrombosis of an artery passing from the splenic artery to the fundus of the stomach. The Banti's disease in this case was in an early stage. He operated by Mayo's two-forceps method, and he is inclined to attribute the thrombosis to injury from this technic. He has discarded it since, and now works with his gloved hand, separating adhesions cautiously with his fingers, as he describes in detail.

His three other patients were men of 60 and 28 and a woman of 39. All had typical hemolytic jaundice of long standing, with extremely fragile reds and much enlarged spleen. Each had long been incapacitated by their anemia and jaundice. Splenectomy brought a complete and apparently permanent cure of all their disturbances although the reds are still fragile. The enlarged spleen had been destroying too many reds, and as soon as the spleen was removed the numbers of reds returned to normal. The spleen in these hemolytic jaundice cases, although enlarged, was apparently normal, while in the polycythemia cases the spleen showed evidences of fibrous degeneration. The adhesions suggested some old infectious process as responsible for the abnormal behavior of the spleen and possibly also for the fragility of the reds. In conclusion Rovsing mentions that, with the cases here reported, nine cases of splenectomy for hemolytic jaundice have been published in the Scandinavian countries. Adding these to the forty-eight recently compiled by Elliot and Kanavel, brings the total to fifty-seven, with fifty-five recoveries. He adds that Banti's first patient has been free from recurrence during the eleven years to date.

Hygiea, Stockholm

February 28, LXXIX, No. 4, pp. 145-192

89 Treatment of Tuberculous Spondylitis. (Om behandlingen av den tuberkulosa spondyliten med sarskilt avseende fastat vid Albees operation.) S. Johansson.—p. 145.

90 *Alcohol Content of the Urine in the Intoxicated. (Några matningar av alkoholhalten i urinen hos berusade personer.) E. M. P. Widmark.—p. 158.

91 Necropsy Findings in Previously Published Case of Sarcoma of the Carotid Gland. (Ett fall av karotiskorteltumör.) G. Gronberger.—p. 169.

90. **Alcohol Content of the Urine in the Intoxicated.**—Widmark states that his modification of Nicloux' test for alcohol in the blood enables the alcohol content of the urine to be determined rapidly and conveniently. He does not give the technic of the test here, referring to his recent article on the subject in the *Skandin. Archiv für Physiologie*, Vol. 35. He tabulates the findings in thirty-seven intoxicated persons, emphasizing that the presence of the alcohol in the urine is the result of a diffusion process, and does not depend on the secretory capacity of the kidneys. The proportion of alcohol in the urine can never be higher than that in the blood, and consequently if the alcohol content of the urine is 4:1,000, for example, we can be confident that the concentration of the alcohol in the blood during the few hours preceding the test must have at least reached this figure. One table shows under sixteen headings the various features of twenty-seven cases, all but eight habitual drunkards. The highest figure was found in a man of 29 picked up on the street intoxicated but not addicted to alcohol; it was a question whether he was sick or intoxicated. He was not an alcoholic. The alcohol content of the urine was 5.7:1,000. It was 5:1,000 in a man of 51, known to be a habitual drunkard. One man of 60, not addicted to alcohol, had drunk a liter of brandy in an attempt to commit suicide. His urine showed alcohol content of 3.7:1,000. In a prostitute of 22 who had taken six glasses of punch, the urine, six hours after she had been brought into the station, showed 2.3:1,000 alcohol. One man known to be a habitual drunkard was brought in supposedly drunk but there were only traces of alcohol in the urine, and he proved to be suffering from pneumonia. In another case the man was not addicted to alcohol but seemed to be intoxicated. The urine showed only 0.1:1,000 alcohol, and the man confessed that he had taken "nerve drops" with suicidal intent. The data tabulated indicate that symptoms of liquor intoxication can scarcely appear until the concentration of alcohol in the urine is over 1:1,000 at least.

Ugeskrift for Læger, Copenhagen

February 1, LXXIX, No. 5, pp. 185-224

92 *Physical and Dietetic Treatment of Constipation, (Bemærkninger om Obstipationens diætetiske og fysikalske Behandling.) A. Borgbjærg.—p. 185.

92. **Dietetic and Physical Treatment of Constipation.**—Borgbjærg warns that we must not forget that a number of factors may cooperate in producing constipation, such as reduction in the amount of feces, harder consistency, delayed passage through the intestines, infrequent desires, and difficult defecation. The Roentgen rays have shown that mechanical obstacles, such as adhesions, overlong mesentery, enteroptosis and movable cecum do not necessarily entail constipation. The passage through the colon may occur quite normally in spite of them. More important is a weakness of the muscles involved in defecation, or overstrong action of their antagonists. In the great majority of cases there is no mechanical cause to explain the constipation. He has known cases of severe constipation in strict vegetarians and he does not approve of continuing exclusively coarse foods too long. How long the patient can be allowed to go without stool is a question to be decided in the individual case, watching the general condition, exploring the rectum and palpating to see that there is no accumulation of feces. Under these conditions he thinks there is no risk in letting the patient go a week at least; thirteen days was the longest limit in his experience.

He never realized the importance of massage as long as it was applied in the patients' homes and he saw the patients only now and then. But since he has been having the patients under his constant supervision in his private clinic, he has become more and more convinced of its great value as an aid in the treatment of constipation. He always has it combined with gymnastic exercises, especially abdominal breathing exercises. When the constipation is the result of retention of the feces in the sigmoid flexure region or rectum or of inability to expel the feces arriving in the rectum, these measures and dieting do not seem to do much good. It is possible that benefit might be derived from internal massage of the rectum or vibration treatment or intrarectal faradization, as Boas commends. He has not had much experience with these measures but thinks they are promising. He says further that the normal position for defecation is undoubtedly the squatting position. The depression, lassitude, etc., which are usually ascribed to autointoxication in case of constipation, he thinks are more often merely the result of worry over the supposed evil effects of the defective intestinal functioning.

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GUNSHOT FRACTURES OF THE SKULL

STATISTICAL AND CRITICAL REVIEW BASED ON A SERIES OF SEVENTY-FIVE CASES [*]

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While I was laboring short-handed in a 1,500 bed hospital during the onset of the Somme push last summer, it was my lot to care for several hundred gunshot fractures of the skull. In spite of the stress of operative and directing work and with no clerical help, I made detailed notes on seventy-five patients, including necropsy records in the fatal ones. To group patients and lighten the work for medical officers and nurses it seemed wise to put patients with head injuries in one ward, using a neighboring ward when an overflow of the thirty-five bed unit occurred. As a routine, spinal puncture, roentgenography and scalp incision were employed to establish diagnosis. We were not supplied with a sphygmomanometer, and so could not make observations on the blood pressure findings.

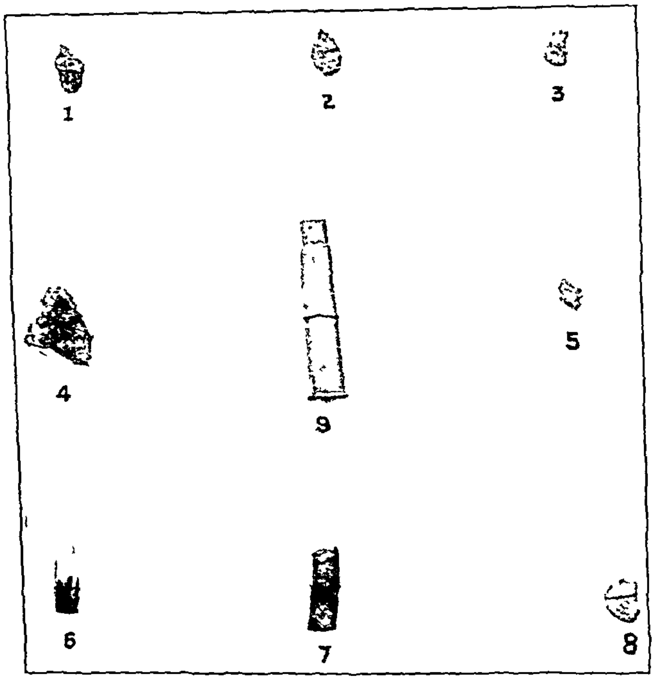

Fig. 1.—Types of missiles found in gunshot wounds. They are compared in size to an empty cartridge shell (9); 1, 2, 3 and 5 are pieces of shrapnel cases; 4 was from a high explosive shell and was removed *from a soldier's brain; 6 and 8 are the Teutonic rifle bullet and soft* shrapnel bullet; 7 is from the base of a shell.

Routine eye examinations were made in every case. To Major Charles A Maghy, oculist of our hospital, I am indebted for painstaking and thorough work in this branch, often carried late into the night, because all patients with head injuries were examined at once after being received in a convoy. In the case reports, some points in connection with these examinations may seem to be lacking. To save repetitions, when there were no positive findings, they are not mentioned.

All operations for elective decompression, drainage and removal of bone fragments or foreign bodies were performed under ideal conditions. The asepsis was rigid. An elastic tourniquet was used in every case possible, and subtemporal decompression was performed as the operation of choice for relief of intracranial increased tension when indications did not point to using the wounds already present.

It seems necessary to call attention to the great protection afforded troops within the firing zone by metal helmets. There is no doubt that the present method of trench fighting and the use of machine guns and shrapnel or high explosive shells lead to a high percentage of head injuries. Metal helmets certainly reduce the mortality of this class of injuries either by diminishing the velocity of the missiles or by deflecting them. All the patients here enumerated were questioned on this point. When able to respond, some told of the hole in their helmets, and some brought them along as souvenirs; but although we understood that discarded helmets were so common around the firing zone that they were used for chicken feed basins, not many came for examination to the base 40 miles away. In practically every instance the helmet was being worn at time of injury—in some the shot had struck below the brim.

REPORT OF CASES

Case 1.—Lance-Corporal W. S., aged 35, Eighteenth Canadians, who had served one year, and was admitted, June 7, 1916, seemed demented from a gunshot wound of the right eye and frontal bone. He asserted that he had had no food for eight days. Spinal puncture revealed a pressure distinctly above normal, and a cloudy fluid which contained about 25 *polymorphonuclear cells per cubic millimeter.*

On the evening of June 6, his temperature had risen to 101.3 F ; the pulse was 88. June 27, a subtemporal decompression was performed. The cerebrospinal fluid was under excess pressure. The dura was opened and the frontal fossa explored. No abscess of the right frontal lobe was found. A guttapercha drain was inserted.

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[*] From material obtained while the author was officer in command of the surgical division of the Twenty Third General Hospital, British Expeditionary Force, France, 1916.

[*] On account of lack of space, this article is abbreviated in The Journal by the omission of many case reports. The complete article appears in the reprints, a copy of which may be obtained on application to the author.

Progress was favorable until July 10, when the patient became nauseated and restless and had another rise of temperature. Death occurred July 15.

Necropsy.—My craniotomy wound was completed healed and uninfected. The dura had practically closed over the cortex in this area. The *left* hemisphere of the brain, however, showed a diffuse cortical meningitis involving the pacchionian bodies. The left temporosphenoidal lobe, opposite from the enucleated eye, was a softened abscess mass. There was a diffuse basilar suppurative meningitis. The infection had traveled by way of the right eye into the nose, across into the left middle cerebral fossa and to the left hemisphere. There was no direct infection through the right orbit. There was present also a small linear crack in the right sphenoidal bone, which was uninfected. It was clearly demonstrated that the infection had not traveled by way of the optic nerve.

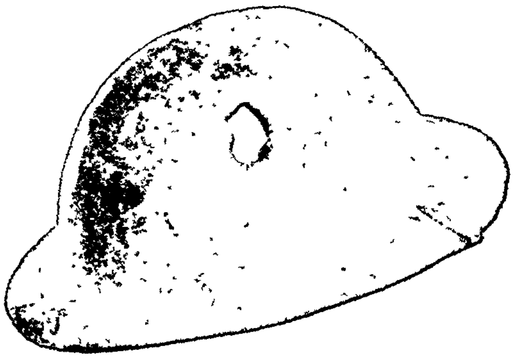

Fig. 2.—The British protective steel helmet with perforation by large shell fragment.

Case 2.—Private C. T., aged 21, Twenty-Seventh Canadians, who had served one and three-fourths years, admitted, June 8, 1916, had received a gunshot wound of the head from shrapnel in the left frontal region penetrating and depressing the frontal bone. A subtemporal decompression was done immediately and an extradural blood clot found with a torn middle meningeal artery. A small piece of shrapnel lying on the dura was removed. The dura was opened. A gutta percha drain was inserted.

In two days the patient developed convulsions and a right-sided hemiplegia, after which the wound was opened widely and allowed to bleed freely. A hernia cerebri developed. The patient continued in a somnolent condition, and died, June 19.

Necropsy.—There was a bloody extravasation of the scalp and temporal muscle; some clots were present on the cortex with a hernia cerebri. There was no localized infection. On removal of the brain, no other skull fracture was found than the frontal puncture, nor was there basilar hemorrhage or meningitis. There was no foreign body in the brain. The left hemisphere was composed largely of dark blood clots which seemed to originate in the posterior wall of the lateral ventricle. Because of the manner of opening the brain, the choroid plexus could not be satisfactorily examined for a series of hemorrhages or ruptured aneurysms. A diagnosis of ventricular hemorrhage was made.

Case 6.—Private G. M., aged 32, Sixtieth Canadians, who had served eleven months, admitted May 20, 1916, had a gunshot wound in the right occipital region 1 inch behind the ear, over which crepitation was palpable. On the left side of the head in the occipital region just above the base line there was apparently a small wound of exit. The patient did not know whether he was struck by shrapnel or a bullet, but he was unconscious some hours and vomited immediately after the wound, which was received, May 18. His sight remained entirely gone until May 20. May 21, his vision in both eyes was limited to the recognition of fingers, and there was no nystagmus. The right fundus showed the disk slightly blurred at the edges, the left disk being normal. The right superior vein was dilated and there were a few flame-shaped hemorrhages just beyond the disk margin. May 21, operation removed the shattered bone fragments from the wound of entrance, but no extensive decompression was attempted. By May 25, vision in both eyes was 6/6 and both fundi were normal. The fields of vision were normal. The patient made a complete recovery, temperature dropping to normal on the fifth day. The diagnosis was complete penetration of the occipital lobes with symptoms. The patient was sent to England, June 14.

Case 7.—Private J. C., Canadian Royal Mounted Rifles, admitted, June 7, 1916, with diagnosis of shell shock and history of having been blown up in a trench by a shell and of having had several sandbags fall on him, was unable to answer questions correctly, and was incoherent. There was a suffusion in both eyelids, and just above the left supra-orbital ridge there was found a fluctuating tumor the size of a robin's egg. On the day of admission he developed more signs of cerebral irritation, and attempted to get out of bed. In a few hours the pulse became 64, regular and full, and the breathing stertorous. The hematoma on the forehead burst next morning, and fomentations were applied. Retention of urine developed. June 9, an eye examination was made in spite of considerable mucopurulent secretion and conjunctival injection. The pupils were round and equal, and reacted to light and accommodation. Fundus examination revealed tortuous veins in each eye with a blurred disk margin and no hemorrhage. The next day the patient was unable to talk, but was restless and smiled at me.

A subtemporal decompression was performed, and an extensive area of hemorrhage was discovered over the whole left lobe with a ragged wound and a compound fracture in the left frontal bone extending through the frontal sinus. The tract of the missile was discovered running down to the base of the brain, but the metal could not be recovered. Small tubal and gutta percha drains were inserted after ligation of the middle meningeal artery. Death occurred, June 12, with necropsy the next morning.

Necropsy.—This revealed diffuse hemorrhage over both sides of the cortex; some edema of the brain; *no* basilar or purulent meningitis but considerable hemorrhage at the base; a small fracture of the superior wall of the left orbit, and a small fracture at the midline of the base just back of the crista galli. The cortex was bulging out of the decompression opening. A puncture fracture of the left frontal bone was found, and in the left hemisphere near the middle, not far from the cortical surface, and at the end of the hemorrhagic tract, was found a small piece of shrapnel casing.

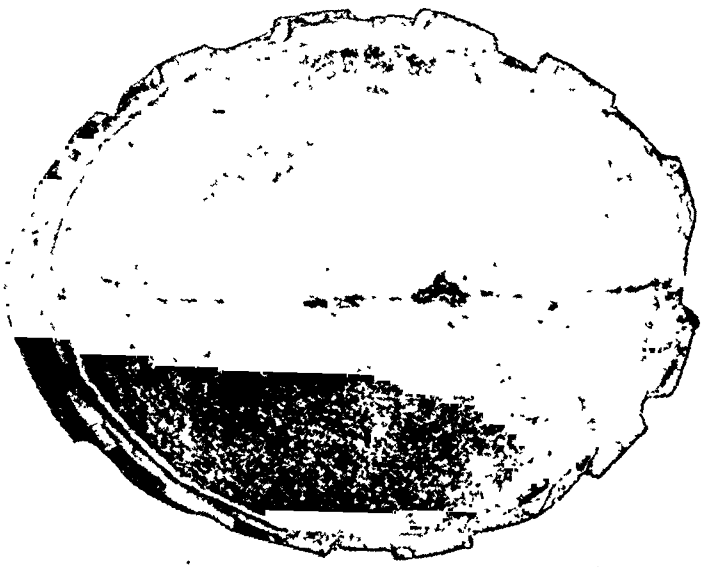

Fig. 3.—Felt lining of the British helmet. This softens the pressure of the metal and affords additional protection. Note the perforation by shrapnel.

Case 10.—Private H. G., aged 19, Fifty-Second Canadians, machine-gun section, admitted, June 8, 1916, had a gunshot wound of the forehead which had been received at Ypres six days before, where he had been struck by a shell fragment. There was a large penetrating wound in the *left* frontal region, the edges of which were necrotic and sloughing, and bubbles of gas appeared at its margin. There was a marked ptosis of the right eye, but there were no paralyses or speech disturbance. Roentgenoscopy revealed a large irregular-shaped piece of metal in the *right* frontal region about 2½ inches from the anterior and three-fourths inch from the lateral surface of the skull, and two smaller particles in the region of the ethmoid sinus.

June 8, an operation of decompression in the right frontal region was performed, and the metal located in the brain was removed without difficulty. An abscess was found about this metal and a gutta percha drain inserted, the right eye being enucleated.

Subsequent symptoms were return of consciousness followed in five hours by convulsive twitchings of the right side of the face, and gradually deepening somnolence, with death, June 10, at 8 p. m.

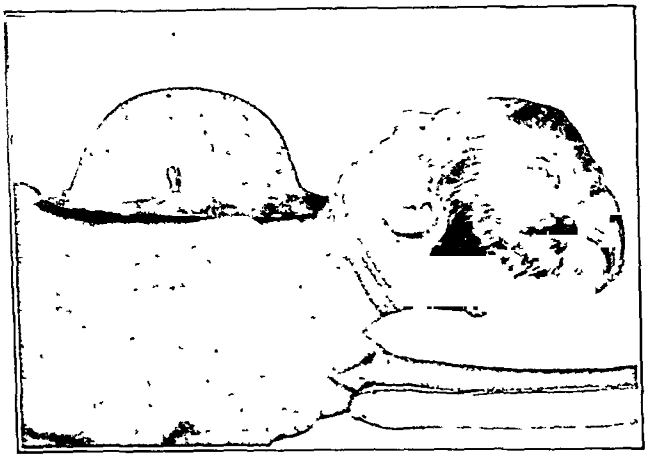

Fig. 4 (Case 9) —Helmet and skull wound: a proof of the life saving power of the protection.

Necropsy.—The whole frontal areas of both lobes were pulpified and bloody, and there was an extensive basilar suppurative meningitis. The back wall of the right orbit had been knocked off by the shrapnel, and one small fragment of bone had been driven down to the base of the skull. Death resulted from extensive infection.

Case 13.—Sergeant W. F., aged 23, Fourth Middlesex, who had served five and one-half years, was injured, July 1, 1916, by rifle fire at Fricourt, and walked to the dressing station. He was admitted to my service, July 2, with a paralysis of the left arm and a wound in the right temporal area accompanied by a depression of the bone.

July 6, a decompression operation was performed over one side, and extensive subdural hemorrhage and brain contusion were found. The dura was lacerated. After the necrotic scalp had been cut away, a plastic operation was performed to cover the defect of the skull. Inside of two days he developed an edema of the right side of the face and forehead, and the paralysis in the left arm remained permanently. Later this condition cleared up and the scalp wound was granulating, and by July 22 was clean; but a hernia cerebri was developing. The patient was perfectly clear mentally, and was anxious to be sent home. The hernia cerebri was increasing gradually, and in spite of all treatment became so large that the prognosis was very unfavorable. Some motion returned in the paralyzed arm. Repeated spinal punctures failed to reduce the size of the protruding brain, and death finally occurred, August 24, after only one day of unconsciousness At necropsy an extensive delayed meningitis was discovered (Figs. 6 and 7).

Case 22.—Sergeant H. Q, aged 30, Ninth Staffs, was injured, June 22, 1916, sustaining a gunshot wound of the head and a gunshot fracture of the right femur. He brought a letter from the Second Canadian Casualty Clearing Station as follows: "He has had scalp wounds but no shock. These wounds were explored, showing grazing of bone and line of fracture extending over the longitudinal sinus. The fracture area was cleaned and some slightly depressed bone over the sinus was left undisturbed. A small piece of metal was found and the scalp wound was left unsutured after cutting away its edges." He left the casualty clearing station, June 24, complaining of headache, and was admitted to my service, June 25, with vision and fundi normal, and temperature 97.8. June 30, the wound near the midline of the vertex was opened and a depressed fracture with crater eminence of the inner table was shown. The bone was trephined and the dura was found to be slightly scratched, but evidently not punctured. The dura was opened and no subdural hemorrhage was found, but the cortex appeared edematous. The wound on the right side of the head was also explored, and it was found that the shrapnel had penetrated the skull. This was found lying on the dura, which was not opened. All the wounds were dressed and drained. The patient had some suppuration in the head wounds lasting for ten days, no headache and normal temperature. The wounds were dressed by hypertonic salt solution. By July 21, he had so far regained his health that he was sent to England.

Case 24.—Private R. J., aged 30, Second South Lancashires, who had served twenty months, was injured, July 2, having sustained a gunshot wound of the head and right leg from rifle fire during an attack on enemy trenches. He lay out in the open two days and three nights, during which time he received three more wounds, including one in the head. He was admitted, July 6. Right and left vision was 6/6, and the fundi were normal. July 7, he was operated on, and a depressed fracture of the frontal bone just to the right of the midline was discovered, a subdural clot exposed, and the brain, found severely lacerated, was drained. A nail extension for the fracture of the thigh was performed. By July 15, symptoms of meningitis appeared, and death occurred, July 21.

Necropsy.—There was a healing wound of the right frontal region; no hernia was to be seen outside the scalp. The right thigh was fractured. There was an infected gunshot wound of the right leg; there was very little pus around the scalp wound, and the brain seemed collapsed. A small hernia cerebri was seen through the dura when the scalp was reflected. The meninges were clean on the outside, but there were a diffuse septic meningitis and encephalitis of both lobes and at the base. There was no brain abscess; there was a fracture of half the temporal bone into the middle fossa and left orbit. The pus from the left frontal sinus had burrowed into the left frontal fossa.

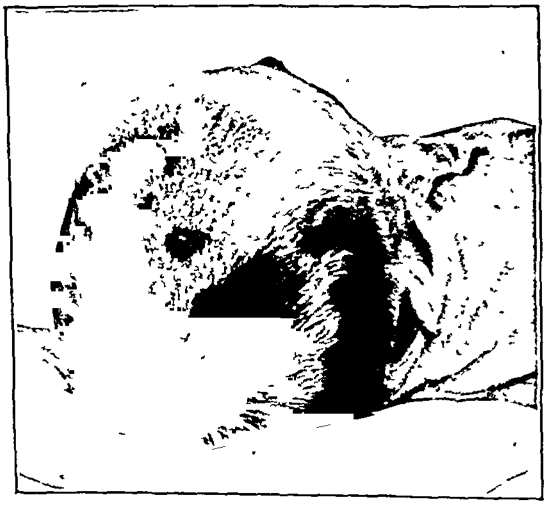

Fig. 5 —Skull wound resulting from the shot through the helmet, shown in Figure 3.

This is an instance in which the infection did not come from the operative wound, but from the extension of the sinus on the opposite side.

Case 29.—Private T. W., aged 27, Tenth Cheshires, injured near Albert, July 11, by shrapnel, was admitted, July 13, perfectly conscious and with no paralyses (Fig. 10). Roentgenoscopy revealed a foreign body in the right orbit and a large piece of shrapnel at the base of the brain. The right eye was ruptured. Vision in the left eye was normal. At operation the right eye was enucleated, and the shrapnel removed from were larger, less opaque and more moist, and the hemolysis was less marked and less sharply defined. After cultivation for a short time, in some instances in the third culture generation, these peculiar features had disappeared simultaneously with the capsule and the colonies were indistinguishable from the usual hemolytic streptococcus. One of the six patients failed to show the hemolyzing streptococcus. The fermentative reactions of the streptococcus from the milk and throats were identical. Dextrose, lactose, saccharose and salicin were attacked; raffinose, mannite and inulin were not.

ANIMAL EXPERIMENTS

The virulence of the streptococcus, the missing link in the chain of evidence to prove the milk guilty, was demonstrated the next day, March 16, and was so reported to the Galesville authorities. The following protocols suffice to illustrate:

Rabbit 1172.—A medium-sized white rabbit was injected intraperitoneally, March 15, at 11:45 p. m., with 3 c.c. of the puslike material from the mastitis quarter of Cow 1.

March 16, 7:30 a. m.: The rabbit was extremely ill; unable to stand. At 11:30 a. m. it was found dead. The peritoneum appeared opaque and dry. There was no free fluid. There was marked degeneration of the liver and myocardium and cloudy swelling of the kidney. The joints, stomach, spleen and lungs showed no changes. Smears from the peritoneum and blood showed many gram-positive diplococci, single and in short chains.

March 17: The blood-agar cultures of the blood showed large numbers of colonies of the streptococcus injected. Dextrose broth cultures showed diffuse turbidity, and smears showed diplococci, single and in short chains.

Monkey showing erysipelas of the face.

Rabbit 1174.—A medium-sized gray rabbit was injected intraperitoneally, March 15, 11:50 p. m., with 1 c.c. of the salt-solution suspension of the swabs for six patients.

March 16, 7:30 a. m.: The rabbit was very ill. At 10:30 a. m. it was found dead. The peritoneum was dry and opaque. There was marked cloudy swelling of the myocardium, kidneys and liver. Smears from the peritoneum showed very many gram-positive diplococci and few leukocytes showing little phagocytosis. Smears from the blood showed a moderate number of gram-positive diplococci in short chains.

March 17: Cultures from the blood on blood-agar plates showed large numbers of colonies of the streptococcus injected. Dextrose broth cultures showed marked turbidity, and in smears diplococci, single and in short chains.

Two white mice (Mice 44 and 45) injected at the same time, one subcutaneously with 0.3 c.c. of the mastitis material, the other intraperitoneally with 0.1 c.c. of the salt-solution suspension of the throat swabs, were ill the next day, and died from streptococcemia, March 17.

A mouse (Mouse 46), injected intraperitoneally with 2 c.c. of the sediment of the mastitis material from Cow 2, in which the blood-agar plate cultures failed to show the streptococcus, died, March 17. There was a dry peritonitis and there were a large number of the typical streptococci in the blood.

The effect of heating the mastitis material from Cow 1 to 60 C. (140 F.) was determined. Cultures made just prior to heating showed countless numbers of the typical streptococcus, while after pasteurization the cultures were sterile. The unheated material was injected as follows: 2 c.c. subcutaneously into one large rabbit, 3 c.c. intraperitoneally into another rabbit, and 0.5 c.c. intraperitoneally into a mouse. The rabbit injected subcutaneously and the mouse died within forty-eight hours from streptococcemia. The former showed marked subcutaneous edema at the point of injection, acute regional lymphadenitis, acute pericarditis and edema of the lungs. The mouse showed peritonitis. The rabbit injected intraperitoneally became ill but ultimately recovered. The animals injected with corresponding amounts of the pasteurized material remained well.

Similar experiments were done with a sample of milk obtained in Rochester, cultures of which showed large numbers of nonhemolyzing streptococci and a moderate number of colon bacilli. Animals were injected as above, first, with this milk as obtained and kept at room temperature for twenty-four hours; second, with the milk inoculated with the virulent streptococcus (Cow 1) and kept at room temperature for twenty-four hours, and third, with the latter after pasteurization. Those injected with the uninoculated milk remained well, as did those injected with the pasteurized material, while those injected with the milk inoculated with the virulent streptococcus either died or became ill.

It has been held by some that to determine the virulence of streptococci by injection is not sufficient to prove etiologic relationship in these and similar studies. We therefore instituted experiments in which the methods of inoculation simulated those occurring in the epidemic; that is, we fed the infected material and swabbed the throats and scratched the skin. In swabbing the throats, care was exercised to avoid injuring the mucous membrane.

Two mice (Mice 47 and 48), whose throats were swabbed once and which were fed bread soaked in the infected material, died in six and three days, respectively. The latter developed swelling of the left side of the face resembling erysipelas. The former had no evidence of infection of the throat, but showed edema and hemorrhagic infiltration of the visceral pericardium covering a large part of the left ventricle, acute splenitis, and approximately 500 and 1,200 colonies of the typical streptococcus in a drop of blood and pericardial fluid, respectively.

Two mice (Mice 49 and 50), were fed bread soaked in the infected material Mouse 49 has remained well. Mouse 50 died in six days and showed several small epicardial hemorrhages, acute splenitis, and edema of the tissues surrounding the throat but no apparent enlargement of the lymph glands and no inflammation of the mucous membrane of the throat. The blood showed countless numbers of the typical hemolyzing streptococcus.

The results in a monkey (Monkey 120) are given in detail. March 18, the throat was swabbed with mastitis material from Cow 1, and the skin on the left side of the nose scratched with a wire dipped in the same material. Bread soaked with the material was placed in the cage, no other food being given for one day.

March 19, 10 a. m.: The left side of the face surrounding the scratch was swollen and red, including the lower eyelid. There was no discharge from the nose and no perceptible swelling or redness of the throat. At 5 p. m., the swelling of the left side of the face was more marked and the temperature was 103 F. The throat was again swabbed.

March 20: The swelling of the face was more marked, the left eye was swollen nearly shut, and the edema extended to within 2 cm. of the ear. The right side of the face showed no involvement.

March 21: The swelling of the left side of the face had subsided perceptibly; the skin was wrinkled and beginning to desquamate; there was marked swelling of the right side of the face, as shown in the accompanying illustration; the temperature was 103 F.; the affected area was hot and red.

March 23: The animal's face was still much swollen and red; the monkey seemed ill; the temperature was 103.5 F.

March 24: The swelling of the left side of the face had markedly subsided.

March 25, 10 a. m.: The swelling of the face was more marked, especially on the right side; the right eye was nearly closed; the animal appeared ill; the temperature was 103 F. At 12 noon, it was found dead. There was marked swelling and edema of the whole face extending to the ears on both sides, well into the neck, and over a large portion of the scalp. The submaxillary lymph glands were enlarged and edematous. In the pharynx was a small amount of pus. The tonsils were not perceptibly enlarged, but the adjacent lymph glands and surrounding tissues were edematous and hemorrhagic. A small amount of slightly blood-tinged fluid was found in both middle ears. The mucous membrane of the nares was normal, but that in the pharynx, including that surrounding the eustachian tubes, was hyperemic and covered with much mucus. In the peritoneal and pericardial cavities was a large amount of slightly turbid fluid containing hemolyzed blood, leukocytes and many streptococci. The epicardium was moist and edematous, particularly along the blood vessels and at the base. The anterior leaflet of the mitral valve was edematous at the base, and near the periphery were two small hemorrhages. There was hemorrhagic edema along the base of the pulmonary and aortic valves. The middle aortic semilunar cusp contained a large edematous nodule along the line of closure. The myocardium, kidneys and liver showed cloudy swelling. The left infrapatellar bursa was hemorrhagic and edematous. There were no other lesions. The blood was markedly hemolyzed.

March 26: Blood agar plates from the subcutaneous fluid, the peritoneal fluid, the pericardial fluid and the blood showed the typical streptococcus in large numbers in pure form. The exudate from the middle ears showed chiefly green-producing streptococci resembling pneumococci and a few colonies of the typical streptococcus.

SUMMARY AND CONCLUSIONS

The clinical picture in this epidemic was typical of "septic sore throat" as described in numerous other milk-borne epidemics. Etiologic relationship of the streptococcus found in the milk was proved. The disease occurred almost exclusively in persons who consumed the milk. In some instances the drinking of one glass was sufficient to bring on an attack. The streptococcus was found in enormous numbers in the material from mastitis quarters of the cows' udders and in small numbers in a normal quarter. It was also isolated in large numbers from the throats of patients. High virulence of the streptococcus was proved by inoculation of animals. The lesions produced resembled those found in patients, especially in those animals in which the methods of inoculation simulated those which occurred in the epidemic. Erysipelas was produced in a monkey by scratching the skin with a wire dipped in the infected material. In the same monkey inflammation of the throat associated with acute enlargement of the lymph glands in the neck, with surrounding edema and otitis media followed swabbing the throat with cotton saturated with the same material. Peritonitis, pericarditis, endocarditis, myocarditis and synovitis were common in the animals as in patients. Heating the milk to 60 degrees for twenty minutes was sufficient to render it innocuous.

Virulent bacteria may be present in the udder of cows with no demonstrable sign of disease. It is practically impossible to handle milk without risk of contamination from human and other sources even though the rigid technic of an operating room be employed. Since milk is such an excellent culture medium, inspection of dairies, certification and grading of milk according to sediment tests and bacterial counts as now practiced, while valuable, cannot permanently safeguard the public health. Efficient pasteurization should be universally adopted.

SEPTIC SORE THROAT

EPIDEMIOLOGIC STUDY OF A MILK-BORNE EPIDEMIC AT GALESVILLE, WIS., DUE TO THE USE OF INFECTED MILK

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An explosive outbreak of 325 cases of septic sore throat in a community of 941 people directly traceable to an infected milk supply occurred in Galesville, Wis., from Feb. 26 to March 19, 1917. The interesting factors in this epidemic were:

1. The virulence of the infection.
2. The tracing of the source of infection to six cows.
3. The possibility of the cows becoming infected from the milker.
4. The large number of families infected.
5. The small number of contact cases.
6. The short period of incubation.
7. The abrupt checking of the epidemic.

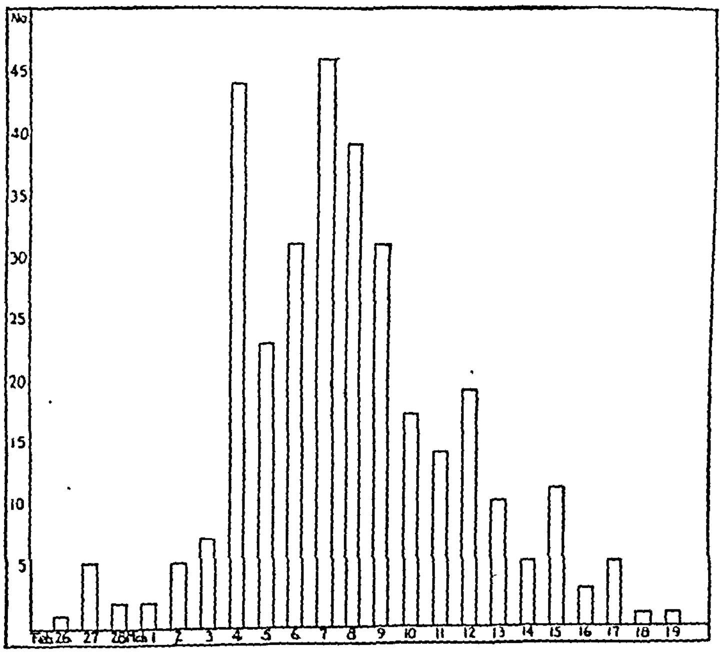
The first case appeared, February 26, and was followed by five cases on the 27th; two on the 28th; two, March 1; five on the 2d, and seven on the 3d. Sunday, the 4th, forty-four cases appeared. Additional cases appeared daily until, March 14, in response to a request of the local authorities, this investigation was undertaken. The explosive nature of the epidemic and the large number of persons infected pointed to a single source of infection, either the milk or the water supply of the village.

To check any further spread of the disease while we were endeavoring to locate the source of the infection, a bulletin was issued and placed in every home, requesting the people to boil all milk and water and giving full directions for disinfecting all discharges from the patient and such other precautions as were necessary to prevent contact infections. As a result of this preventive measure, the epidemic was immediately checked, only two new cases appearing after the period of incubation had elapsed.

The village of Galesville obtains its milk supply from two large herds of over twenty cows, and many smaller ones containing from two to ten cows. During our investigation, the milk from 159 cows was examined. Investigation showed that most of the infected persons obtained milk from a dairy operated and owned by the S. Brothers, who, in addition to running a dairy, also manufactured ice cream. The dairy itself was of a better type than most dairies usually found in like rural communities. The barn was well constructed, with cement floor and steel stanchions, and was fairly well lighted and ventilated. Running water was supplied in a tank in the center of the barn. The herd consisted of forty grade Jerseys, twenty-six of which were being milked at this time. There were four men handling the milk, two of whom were the owners of the plant. These men showed no evidence of any skin disease. In three of them, throat cultures of streptococci were obtained; but they gave no history and showed no evidence of illness, aside from a slight redness of the throat.

One of the S. brothers, about Jan. 28, 1917, had an attack of severe sore throat, the nature of which we were unable to determine. It was accompanied by a marked enlargement of the glands of the neck. It is possible that this may have been a streptococcus infection.

A sample of the bulk milk was taken from the S. dairy and centrifuged. The sediment from this milk examined microscopically showed streptococci, leukocytes and pus cells in large numbers. These streptococci were identical in appearance with the organisms recovered from the throats of many of the patients.



Daily course of the Galesville epidemic, Feb. 26 to March 19, 1917; 325 cases with nine deaths.

The herd of twenty-six cows producing milk was then examined, and three cows were found which gave evidence of having mastitis in one quarter. The milk from these three cows did not show signs of garget as the term is generally understood. It was not thick or clotted, and did not contain blood. The milk of two of these cows had a watery appearance, while the milk from the other cow appeared normal. Samples of milk were taken in a sterile container from each teat of every cow producing milk, placed on ice and taken to LaCrosse, where in the laboratory of the city health department, with the assistance of Dr. J. M. Furstman, we completed our examinations. Streptococci were found in enormous numbers in the milk from six cows. Three of these cows proved to be the same cows that showed evidence of mastitis on the physical examination. One of the six infected cows had a subnormal temperature. The temperature of the other five was normal. Two of these cows were in very poor condition, and one cow showed evidence of stiffness in the joints. Three of the infected cows were heifers while the other three were older cows

The symptoms of this disease as described in previous epidemics were present here with the possible difference of a much shorter period of incubation and a more profound toxemia.

The first symptom to appear was generally a marked chill, followed by a rapid rise in temperature and occasionally by a severe sweating. The entire mucous membrane of the throat was red and covered with a glistening mucus. Nothing resembling a membrane was present except in three cases, and this was readily removable without bleeding.

The superficial blood vessels of the throat were greatly congested, and appeared as scarlet threads on the reddened membrane. The uvula was generally edematous. The tongue was seldom heavily coated. The temperature was usually high, frequently reaching 106. The pulse was generally weak and rapid. The prostration was extreme in all cases. Nausea and vomiting frequently marked the onset of the disease, and in some cases was a serious complication. Seventy-five per cent. of those afflicted showed enlargement of the cervical glands.

The muscles of the neck were stiff, and movement of the head caused pain. Most of the patients complained of difficulty in swallowing.

The infection showed an affinity for serous membranes; endocarditis and pericarditis occurred, and various bursae of the joints were frequently involved. Peritonitis was not infrequent. There were a few cases of erysipelas and several of otitis media. One case of orchitis was recorded. As a result of this epidemic, there had occurred in the village of Galesville, up to March 23, 1917, nine deaths.

It was possible to establish the period of incubation accurately in many cases, as many persons who were not using milk from the S. dairy in their home ate ice cream or drank milk at parties, and almost without exception they were taken suddenly ill within forty-eight hours. Without exception, whenever the period of incubation was three or four days, the result was a mild case.

More females were found to have been infected than males, as the survey showed 184 females and 141 males. Forty-five cases were contracted from having eaten ice cream or from the use of cream in coffee at restaurants supplied with milk from the S. dairy. Most of these patients were men. Several victims ate whipped cream at parties at which only adults were present.

Few children were affected. Therefore, only two age divisions were made. There were 103 patients under the age of 20, and 222 over 20, a total of 325. The total number of families in the village was 242; the total number of families afflicted was 121; 50 per cent. of all families, therefore contained one or more cases.

Only two cases were found that could be classed as contact cases. One occurred in one of the three physicians practicing in Galesville. The other contact case was in an infant whose father contracted the disease in a restaurant the week preceding the illness of the child. Another physican using the milk from the S. dairy contracted the disease. This was not counted as a contact case. Of the 323 cases not occurring by contact, 255 were in families using milk from the S. dairy, and sixty-eight in families not using it.

Of the sixty-eight patients who were not regular patrons of the S. dairy, forty-one contracted the infection at restaurants using S. milk; nine ate S. whipped cream at parties; twelve used S. cream once; four ate S. ice cream (not included above), and two ate S. cream at school.

Forty-eight persons using S. milk escaped the infection. The percentage of population infected was 34.53. The percentage of families infected was 50.

COMMENT

It was our unusual privilege to be called at the height of the Galesville epidemic, to recognize the organism causing the disease, trace the source of infection to a single dairy, isolate the infected cows from the herd, and have the satisfaction of seeing the epidemic checked.

NUMBER OF CASES IN FAMILIES

Number of Families	Number of Cases in Family	Total Cases
39	1	39
34	2	68
20	3	60
16	4	64
6	5	30
3	6	18
1	7	7
1	8	8
1	9	9
*	23	22
121		325

* Gale College

We believe that the issuing of the bulletin, requesting the citizens to boil all milk and water and giving full directions for disinfecting all discharges from the patients and such other precautions as were necessary to prevent contact infections, checked the epidemic, and was a large factor in preventing contact cases. This is a measure that could well be adopted in all milk-borne and water-borne epidemics.

This epidemic furnishes additional proof that pasteurization of bottled milk under official supervision is the only method of securing a safe milk supply.

Segregation of Tuberculosis Carriers.—The Committee on Prevention of Tuberculosis of the Charity Organization Society, New York, has made a study of lodging house cases This type constitutes a large percentage of cases treated each year which is more careless in habit, more ubiquitous in wandering, and less easily supervised than any other. Statistics for 1911 show that persons living in furnished rooms, in lodging houses or reported as homeless, constituted more than 27 per cent, of all admissions to tuberculosis hospitals in that year. The committee suggested that the health department set aside beds in hospitals to be used for detention cases and that, in cooperation with the police department, facilities be provided for examining lodgers at the municipal lodging house, and that tuberculosis patients when discovered be removed at once to a detention hospital. This suggestion has been accepted by the health department, and Riverside Hospital is used for a detention hospital.

CALCIUM IN THE BLOOD IN TUBERCULOSIS *

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Numerous attempts have been made to show a relationship between the onset and the course of tuberculosis and the metabolism of the mineral elements.[1] The administration of lime as a therapeutic measure has been recommended by different authors through a period of many years and up to the most recent time.[2] High lime administration is employed consciously or otherwise wherever forced feeding which includes much milk (the highest in calcium of the ordinary foods) is practiced. Thus a pint of milk contains about 0.5 gm. of calcium, which is sufficient to maintain calcium equilibrium in an average man, and from five to ten times this amount of milk is frequently used in forced feeding.

It is, of course, difficult to tell with certainty whether or not the calcium salt ingested is responsible in part for the clinical improvement which has been reported in certain cases following its administration. Metabolic balances have been prepared for the mineral elements in tuberculosis, some showing losses of calcium from the body in incipient and others in advanced tuberculosis. Sufficient work has not been done, and the findings have not been constant enough to support definitely the view of a preliminary decalcification predisposing to tuberculosis or that the losses in more severe cases are essential manifestations of the disease. It has also been assumed that the administration of these salts might stimulate the processes of calcification, in particular those of the tubercles, and thus aid in the localization of the disease. For this there is again no real physiologic evidence. The unsatisfactory status of our knowledge of calcium metabolism in tuberculosis is to a considerable extent a reflection of a similar condition with regard to normal calcium metabolism. For instance, very little is known with regard to the conditions of transportation of calcium and the factor or factors which determine its deposition in particular tissues. Our knowledge of the calcium content of the blood under various conditions has been almost negligible. No determinations of this element in the blood of patients with pulmonary tuberculosis have been made, so far as we are aware, in spite of the obvious bearing of such information on the views which have been presented.

We have, therefore, determined the amounts of calcium present in the blood in a number of patients suffering with pulmonary tuberculosis whose conditions are becoming progressively less favorable, as well as in certain patients convalescing from the disease. The method employed for the determination was the one elaborated by two of us.[3] The determinations were made on the serum, which we have found in the pathologic conditions so far studied not to deviate significantly from the plasma in calcium content.

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* From the Laboratory of Physiological Chemistry of Jefferson Medical College

[1] A review of the literature is given by Kahn. Med Rec, New York, 1914, 85, 924

[2] Fisac. Siglo méd, 1916, 63, 717.

[3] Halverson, J. O, and Bergeim, Olaf: Jour Biol Chem, 1916, 24, 22

The convalescing patients were sanatorium patients showing great improvement in symptoms and physical signs of the disease. The blood was taken before breakfast, no milk or other food high in calcium being given in the evening meal just preceding. The advanced cases were chiefly from the Department for Diseases of the Chest of the Jefferson Hospital, and with a few exceptions the blood samples were taken before breakfast.

The calcium content of the blood serum of normal human adults appears to range between 9 and 11 mg. per hundred c.c., usually, however, below 10.5 mg. It will be noted that the maximum variations observed in tuberculosis are from 8.4 to 11 mg. of calcium per hundred c.c. No striking deviations from the normal were noted in this condition. In the advanced cases the variations were the most marked. Rather high values were obtained when the blood was drawn after the noon meal (Cases 8, 9 and 24), which might possibly indicate that the ingestion of the food had some slight temporary effect on the calcium level. Considerable amounts of fat were found in these specimens of blood, suggesting that fat was being absorbed and transported. Thus it appeared to be desirable to take specimens for blood calcium determinations before breakfast, which was done in nearly all the cases herein studied. It will be noted that the average value obtained in the far advanced cases in which the patient died within two months of this examination was 9.1 mg., while the average of the far advanced cases showing slight improvement was 10.1 mg., an appreciably higher figure. A similar relation holds for the moderately advanced cases. The differences, however, are not sufficiently large or sufficiently constant to permit the drawing of a definite conclusion in the present state of our knowledge.

In the convalescing cases the calcium content lies well within normal limits, and varies but little. The average figure obtained was 9.7 mg. per hundred c.c. of blood serum. The diets in these cases were similar, nearly all being high in milk and hence in calcium. The lowest value was obtained in a patient no longer on a high milk diet. There is no evidence, however, that the long continued high calcium diet had any tendency to increase the calcium content above average normal values.

The calcium content of the blood appears to be regulated with great nicety, and we have found it to be within normal range in a considerable variety of pathologic conditions. Marriott and Howland[4] have shown that marked decreases occur in uremia with acidosis, these being apparently brought about by the phosphate retention which takes place. Here the lowered calcium appears to be secondary to marked changes in the chemical composition of the blood as the result of exceptional disturbance in the excretory function. In such cases we have observed increases toward the normal range in blood calcium after calcium lactate administration. Whether or not this is due to withdrawal of blood phosphate through the intestine by the ingested calcium, the findings would not seem to have any direct applicability to pulmonary tuberculosis, in which disturbances of elimination, in any way comparable to this, do not occur.

The constancy of blood calcium has been shown by Meigs and Blatherwick.[5] They found calcium remarkably constant in the blood of cows during pregnancy and lactation, although the mobilization of calcium for milk production is very great compared to the amount present in the blood, and this calcium must come, to a considerable extent, from the bones of the animal. In fact, this deficiency of calcium in the metabolism of

CALCIUM CONTENT OF THE BLOOD OF TUBERCULOUS PATIENTS

Case	Name	Diet	Stage of Disease	Condition	Calcium in 100 Cc. Blood Serum, Mg	Averages, Mg.
1.	J. P.	10 glasses of milk, 4 raw eggs, and one meal	Incipient	Improved	9.9	
2.	A. L.	House	Incipient	Improved	9.4	
3.	E. F.	12 glasses of milk, 6 raw eggs and one meal	Incipient	Improved	10.1	
4.	P. D.	12 glasses of milk, 6 raw eggs and one meal	Incipient	Improved	9.6	
5.	E. E.	12 glasses of milk, 6 raw eggs and one meal	Incipient	Improved	9.9	
6.	J. Ha.	12 glasses of milk, 6 raw eggs and one meal	Incipient	Improved	9.9	
7.	J. Ho.	3 meals	Incipient	Improved	9.3	9.7
8.	B. S.*	House; includes milk	Moderately advanced	Improved	10.9	
9.	A. B.*	House; includes milk	Moderately advanced	Improved	10.4	
10.	C. M.	House; includes milk	Moderately advanced	Improved	10.4	
11.	W. S.	House; includes milk	Moderately advanced	Improved	10.5	
12.	L. P.	House; includes milk	Moderately advanced	Improved	9.6	
13.	J. M.	House; includes milk	Moderately advanced	Improved	10.7	10.4
14.	B. M.	House; includes milk	Moderately advanced	Unimproved	10.2	
15.	D. C.	House; includes milk	Moderately advanced	Unimproved	8.4	
16.	J. P.	House; includes milk	Moderately advanced	Unimproved†	10.9	9.8
17.	M. S.	House; includes milk	Far advanced	Unimproved†	9.4	
18.	G. H.	House; includes milk	Far advanced	Unimproved†	8.6	
19.	G. T.	House; includes milk	Far advanced	Unimproved†	9.1	
20.	H. P.	House; includes milk	Far advanced	Unimproved†	9.1	
21.	B. S.	House; includes milk	Far advanced	Unimproved†	9.7	
22.	G. D.	House; includes milk	Far advanced	Unimproved†	8.7	
23.	M. H.	House; includes milk	Far advanced	Unimproved†	9.1	9.1
24.	J. Hu.*	House; includes milk	Far advanced	Slight improvement	10.6	
25.	S. L.	House; includes milk	Far advanced	Slight improvement	10.2	
26.	T. M.	House; includes milk	Far advanced	Slight improvement	11.0	
27.	N. M.	House; includes milk	Far advanced	Slight improvement	8.7	
28.	J. M.	House; includes milk	Far advanced	Slight improvement	9.1	
29.	J. W.	House; includes milk	Far advanced	Slight improvement	10.6	
30.	A. S.	House; includes milk	Far advanced	Slight improvement	10.5	10.1

* Blood sample was taken after the midday meal; the other samples were obtained before breakfast.

† Died within a period of two months following blood examination.

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[4] Marriott, W. M., and Howland, John: Phosphate Retention as a Factor in the Production of Acidosis in Nephritis, Arch. Int. Med., November, 1916, p. 708.

[5] Meigs and Blatherwick: Proc. Am. Soc. Biol. Chem., December, 1916.

lactating cows has been demonstrated by Forbes and associates.[6]

The total blood of a 60 kg. man contains about 0.3 gm. of calcium. The bones contain approximately 4,000 times as much. With this great reserve supply of calcium, a portion of which is available, as is indicated by the great constancy of blood calcium under varying diets and conditions, a physiologic basis for the administration of calcium salts in tuberculosis has yet to be demonstrated.

SUMMARY AND CONCLUSIONS

Determination of the calcium content of the blood of patients with advancing and convalescing tuberculosis revealed that in the incipient cases in which the patients, who were on a high milk diet, showed marked improvement, the values for calcium in the serum were normal and fairly constant. In no case was the calcium value increased above normal figures by this high calcium diet. In advanced cases the variations obtained were greater (some rather high and some rather low values being obtained), and improving patients showed on the average slightly higher values than the unimproved. No marked deviations from the normal, however, were observed in the calcium content of the serum of patients in the various stages of pulmonary tuberculosis.

The failure of the body to deposit lime around the tuberculous areas is to be ascribed, not to a deficiency in blood calcium, but rather to an inability of the cells of the tuberculous area properly to utilize available calcium.

ICTERUS GRAVIS SYPHILITICUS

ITS RELATION TO ACUTE YELLOW ATROPHY

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Jaundice, occurring as a rare complication in the onset or early secondary period of syphilis, was first recognized by Paracelsus in 1585. It is also mentioned by Portal, Massa, Monti, Batallus, Fallopio and other writers of the latter part of the sixteenth century, in accordance with an early belief that the liver was the site of election for venereal disease. At a later date Ricord[1] recorded icterus in two cases of early syphilis and ventured the statement that syphilis was the cause of the jaundice. In 1853 Gubler[2] substantiated the work of Ricord with a report of seven cases, three of which he collected from the literature, and by clinical observation proved the jaundice to be syphilitic. Subsequently Lancereaux[3] collected reports of twenty cases of syphilitic icterus.

Jaundice in early syphilis is now recognized as occurring in two forms, mild jaundice and severe jaundice, or icterus gravis. The mild form, which is by far the more common, differs very little in symptomatology from ordinary catarrhal jaundice. From an analysis of 15,799 cases of early syphilis in Engel-Reimers' clinic, Werner[4] found that fifty-seven, or 0.37 per cent., were jaundiced. Engel-Reimers[5] reports eleven cases of icterus occurring among 759 cases of early syphilis in women, or 1.4 per cent. The difference in these figures represents fairly accurately the more common occurrence of the condition in women. In Engel-Reimers' series, 80 per cent. of the patients developed the jaundice within three months after infection. In Michael's[6] analysis of twenty-five cases, in three the icterus appeared before the chancre, in one case with the chancre. While most common at the time of the exanthem, a small percentage of the cases occur late in the secondary period, and not coincident with the eruption. In general, the onset is more sudden than in catarrhal jaundice, and there is often an absence of gastro-intestinal symptoms, though too much stress must not be laid on this point, as gastro-intestinal symptoms often accompany the florid stage of syphilis. The appetite is generally good, though there may be a distaste for fats. In some cases the stools are clay colored; in others they are normal. Swelling of the liver is a fairly uniform finding. The spleen is often enlarged, but this may be attributed to the generalized spirochetosis of the secondary period.

The icterus extends over a few weeks and disappears, particularly under treatment, though cases are reported in which it has become chronic. In twenty-five cases collected in seven years from Buschke's[7] clinic, the duration was never shorter under treatment than two weeks, with an average of four weeks. In many instances it has developed into the grave form. That it is not due to the administration of mercury is proved by the fact that it often appears when mercury has not been administered, and readily disappears on intense mercurialization.

The three cardinal points brought out by Gubler, the absence of other cause for the jaundice, its usual appearance with the general eruption, and the rapid disappearance on specific treatment, are the features which still serve clinically to differentiate the syphilitic condition from simple catarrhal jaundice. Salomon[8] regards early syphilitic jaundice as an indication of feeble resistance, and therefore of prognostic importance. Four of Richter's[9] forty-one collected cases were malignant syphilis.

The explanations of the cause of the mild form of syphilitic jaundice are many and varied. Gubler believed it to be due to a roseola or exanthem of the intestine and bile duct. French writers in general regard it as the result of swelling of the portal lymph vessels. Engel-Reimers[5] was able to show at necropsy in three cases that it was an obstructive jaundice caused by syphilitic adenitis of the portal lymph glands. Lubinoff[10] has reported the necropsy of a case of syphilitic icterus associated with precocious late manifestations in which the ductus choledochus was occluded by pressure of an enlarged lymph gland. Senator[11] holds that the jaundice is due to an inflammatory reaction. Neumann[12] says that all of the foregoing factors may be coincident. In view of the swelling of the liver, Mauriac[13] believes that the jaundice is due to an active hepatitis with hyperemia and stopping up of the biliary ducts. Finger[14] says that it is due to syphilotoxin. This is essentially the explanation offered by Fournier.[15] Still others ascribe the cause to a fear of the disease which manifests itself on the appearance of the secondary lesions. Talamon[16] has described an interesting case in a girl aged 17 in whom such a fear brought about an "emotional jaundice" within eighteen hours, followed in three weeks by death from acute yellow atrophy. He states that the emotional jaundice probably renders the liver more susceptible to the effects of the syphilotoxin.

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[6] Forbes and Beegle: Bull. 295, Ohio Exp. Sta., 1916.

[1] Ricord: Clinique iconographique de l'Hôpital des vénériennes, 1851.

[2] Gubler: Compt. rend. Soc. de biol., 1853, **5**, 255; Gaz. méd. de Paris, 1854, No. 13, p. 186; ibid., No. 15, p. 214, etc.

[3] Lancereaux: Traité historique et pratique de la syphilis, Ed. 2, 1866, p. 146; Traité de la syphilis, Ed. 2, Paris, 1873.

[4] Werner: München. med. Wchnschr., 1897, **44**, 736.

[5] Engel-Reimers, Julius: Monatsh. f. prakt. Dermat., 1892, **15**, 475.

[6] Michael: Arch. f. Dermat. u. Syph., 1914, **120**, 694.

[7] Buschke: Berl. klin. Wchnschr., 1910, **47**, 238.

[8] Salomon, cited in Loomis, A. L., and Thompson, W. G.: System of Practical Medicine, by American Authors, New York, Lea Brothers & Co., 1898, **3**.

[9] Richter: Charité-Ann., 1898, **23**, 365.

[10] Lubinoff: Méd. mod., 1894, No. 1, p. 13.

[11] Senator: Charité-Ann., 1893, **18**, 322: ibid., 1898, **23**.

[12] Neumann: Spezielle Pathologie und Therapie, Vienna, 1899, **23**, 449.

Of far greater importance than mild icterus is the grave form, which often supervenes on the former, though it may arise insidiously with a stormy onset and rapid course. The tendency if untreated is for the condition to go on to acute yellow atrophy. In 1854 Lebert,[17] out of a collection of seventy-two cases of acute yellow atrophy, reported seven as associated with early syphilis. Tierfelder[18] found that eight out of eighty-one cases of acute yellow atrophy occurred in old or recent syphilitics. In Osler's Modern Medicine,[19] it is stated that 10 per cent. of all cases of acute yellow atrophy occur during secondary syphilis. Richter,[9] in 1898, collected reports of thirty-nine cases of syphilitic icterus gravis from the literature, and added two of his own. Umber[20] collected reports of fifty cases. In Michael's[6] analysis of forty cases of jaundice in early syphilis, four, or 10 per cent., went on to acute yellow atrophy. The condition seems to be much more common in women, the ratio being about 5:1. In 1894, Lasch[21] named the condition "icterus syphiliticus praecox," and many cases were subsequently reported under that title. In fifty cases reviewed by him, mercury had been administered in only three previous to the appearance of the icterus. Of thirty cases, the icterus occurred in twenty-five within three months after infection. In most of the cases reported in the literature, the icterus has occurred coincident with the exanthem. It may appear earlier. Practically all cases begin sometime during the first year of infection. Bendig[22] has recently observed a case similar to the one herein reported, in which the icterus occurred subsequent to the complete disappearance of the secondary syphilitic lesions under mercury rubs. He argues that it is not sufficient to cure the manifest lesions of the syphilis, for when these have disappeared, there is within the body, still present, the syphilotoxin.

The cause of grave icterus was carefully studied by Buschke and Zernik,[23] in 1911, who concluded that it was due to a syphilotoxic parenchymatous hepatitis and not an obstructive jaundice. This view was earlier put forth by Buraczinski,[24] and Vespremi and Kanitz,[25] and at present is generally accepted as correct. Other factors may sometimes play a rôle. Engel-Reimers[5] and others report cases in which pregnancy complicated the condition. Erichson's[18] case followed abortion. In Richter's[9] forty-one cases, a few were complicated with gonorrhea, others with sepsis. None had previous liver disease. Mercury does not play a part in the causation. Jaundice has been noted as occurring in the course of salvarsan injections, and a salvarsan icterus, often leading to death, is reported by Milian,[26] Rille,[27] Pinkus,[27] Klausner,[28] Arno Hoffmann,[29] Levy, Bing and Duroeux,[27] Dujardin[30] and Lube.[31] Milian,[26] who has studied these cases at length and reported several of them, has come to the conclusion that they are in no way due to the salvarsan itself, but that they are in the nature of hepaticorecidives, analogous to those occurring in the nervous system. In each case there results a lighting up of a syphilitic process in the liver and a resulting hepatitis which calls for more salvarsan, just as in the case with recurrences in the nervous system. The case of grave icterus which is described herein followed salvarsanization, but could not in any way have been due to the salvarsan, as it appeared abruptly four months after the last salvarsan injection had been given.

The symptomatology of icterus gravis is that of acute yellow atrophy, differing chiefly in the fact that it yields to specific treatment when recognized early. The onset is variable, generally insidious. A mild icterus usually appears as the first objective sign, occasionally accompanied by malaise, vomiting and constipation, but usually without gastro-intestinal symptoms. There may be a slight rise in temperature, though subnormal temperatures are often reported. The pulse is slightly accelerated. Severe abdominal pain may be complained of. Lumbago and muscular pain are common. There is often a debility similar to that of typhoid fever. This may go on to collapse. Cases are reported with ascites. While not a uniform finding, hemorrhagic symptoms are mentioned by many authors. These are manifested by gingivitis, bloody vomitus, melena, purpuric spots in the skin, and more rarely hemoptysis, hematuria and metrorrhagia. There is often a hemorrhagic nephritis. Pregnant women may abort, but this is not always the case.

The second stage is very definite in onset and is marked by a pronounced change for the worse in the general condition, by rapid decrease in size of the liver, the occurrence of leucin and tyrosin in the urine, and especially by the appearance of nervous symptoms. Headache appears which, if present before, becomes very intense. There may be pupillary disturbances and amblyopia. Mentality is affected. The patient may become depressed, or restlessness may supervene during which there are insomnia, pain, convulsions and delirium. The patient often screams and becomes very violent. Apart from the jaundice, the clinical symptoms may closely resemble meningitis. Partial paralysis, such as squint, has been noted. In Fournier's[15] case there was hemiplegia. Dyspnea may resemble the air hunger of Kussmaul. Constipation extends throughout the condition, and the dejecta are offensive. The patient finally dies in coma with complete relaxation of the sphincters.

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[13] Mauriac: Gaz. hebd. de méd., 1888, **25**, 564.
[14] Finger: Die Syphilis und die venerischen Krankheiten, 1892.
[15] Fournier: Traité de la syphilis, Paris, J. Rueff, 1906; Leçons sur la syphilis chez la femme, Paris, 1883, p. 926.
[16] Talamon: Méd. mod., Feb. 13, 1897, p. 97.
[17] Lebert: Virchows Arch. f. path. Anat., 1854, **7**, 385.
[18] Cited by Richter (Footnote 9).
[19] Osler and McCrae: Modern Medicine, Philadelphia, Lea & Febiger, **3**.
[20] Umber: München. med. Wchnschr., 1911, **58**, 2499.
[21] Lasch, O.: Berl. klin. Wchnschr., 1894, **31**, 906.
[22] Bendig: Berl. klin. Wchnschr., 1908, **45**, 1229; München. med. Wchnschr., 1915, **62**, 114.
[23] Buschke and Zernik: Arch. f. Dermat. u. Syph., 1911, **106**, 121.
[24] Buraczinski: Wien. klin. Rundschau, 1907, **21**, 651, 699.
[25] Vespremi and Kanitz: Arch. f. Dermat. u. Syph., 1907, **88**, 35.
[26] Milian, M. G.: Bull. de la Soc. franç. de dermat. et de syph., No. 7, July, 1914, to December, 1915; Ann. d. mal. vén., October, 1911.
[27] Cited by Milian (Footnote 26).
[28] Klausner: München. med. Wchnschr., 1911, **58**, 570.
[29] Hoffmann, Arno: München. med. Wchnschr., 1911, **58**, 570.
[30] Dujardin: Jour. méd. de Bruxelles, April 12, 1914, p. 182.
[31] Lube: Deutsch. med. Wchnschr., 1914, **40**, 946.

The liver is probably enlarged in the onset of all cases, though this is not always easily made out. The enlargement is smooth, the right lobe being most affected. In one third of the cases the liver is tender. After a variable period, reduction in size comes on suddenly with the severe symptoms, and heralds a rapid fatal outcome.

At necropsy the liver presents the typical picture of acute yellow atrophy, often being reduced to one-third its normal size. The more slowly progressing cases show areas of acute yellow atrophy interspersed among areas of red atrophy, the latter representing earlier destruction. In some cases the entire liver is not affected, while in others not a single normal cell remains. Buraczinski,[24] Vespremi and Kanitz,[25] Fischer[32] and Bendig[22] failed to demonstrate spirochetes in the liver of cases at necropsy. Buschke and Zernik[23] injected the liver tissue into monkeys with negative results. The spleen is often enlarged.

The urine is diminished in amount and highly colored with bile pigment. There is no glycosuria. Small amounts of albumin often occur together with casts. Albumosuria is reported, and is supposed by some to come from direct destruction of the liver cells. Crystals of leucin and tyrosin are invariably present in greater or less amounts, often in so great an abundance that they spontaneously precipitate, but Rolleston[33] does not regard these as pathognomonic. On the other hand, Senator[11] Buschke and Zernik,[23] and others look on their appearance as evidence of beginning liver atrophy.

In some cases the stools contain bile pigment; in others they are clay colored.

There is no characteristic blood picture.

Unrecognized cases are invariably fatal. According to Richter,[9] the course is somewhat longer than that of acute yellow atrophy from other cause, the average duration being eighty-four days. Many cases are on record, however, as having ended fatally in less than two weeks. Precipitous cases are not uncommon. In one of Bendig's[22] reports a rather mild icterus with indefinite prodromal symptoms extended over three days, followed by a stormy exacerbation and death within twenty-four hours. With early specific treatment, the course may be arrested or retarded.

The older writers regarded the condition as always fatal. The prognosis, however, seems fairly good for recovery if the condition is recognized early and intensive specific treatment is begun. Isolated cures of advanced cases by salvarsan are recorded (Duhot,[34] Umber[20]).[35] Several cases of recovery have been reported (Senator,[11] Buschke and Zernik,[23] Lasch[21] and others) even after appreciable decrease in the size of the liver and the appearance of leucin and tyrosin in the urine. The condition should be diagnosed in the stage of enlargement. Purgation with calomel and intense mercurialization, either by injections or rubs, is indicated by most authorities.

During the past year a case of icterus gravis, occurring early during the course of syphilis and resulting in recovery, was under observation in the department of dermatology and syphilology at the university hospital.

The patient, a man, aged 38, married, salesman, entered the hospital for the first time, Dec. 11, 1915. At that time he had a typical chancre of the penis and a maculopapular rash over the entire body. He had been married fourteen years and was the father of four healthy living children. His wife had had no miscarriages. The patient had an attack of gonorrhea at the age of 17. Otherwise the past history was negative.

A sore had appeared on the penis in October, 1915, following a clandestine exposure about six weeks previously. The sore was painless and attended by slight discharge. It had been treated locally by the family physician. The patient had not noticed any glandular swelling. The eruption over the body had appeared one week previous to his entrance to the hospital. He had had slight headache for a few days, distinctly worse at night, and complained that he was not feeling as well as usual, although not definitely ill. He had received up to this time no antisyphilitic treatment.

The patient was found to be well nourished with no apparent loss of weight. There were numerous syphilitic papules on the scalp. On the forehead, over the body and on the upper portion of the extremities there was a diffuse maculopapular rash typically roseolous in character. On the right side of the penis at the corona was a typical chancre about the size of a dime with lamellar induration. On the right side of the tip of the tongue there was an involuting mucous patch. The superficial lymph glands were all enlarged. The superficial reflexes were very active and not markedly exaggerated. The spleen was not palpable. The blood Wassermann test was + + + +.

Ophthalmologic examination revealed marked edema and hyperemia of the retina—a low grade neuroretinitis, specific in type.

The neurologic examination revealed slight tendency to stagger with the eyes closed, and pupils which were somewhat sluggish. The lumbar puncture, however, revealed an entirely negative finding: 4 cells, albumin negative, Nonne-Apelt negative, spinal fluid Wassermann test negative. The department of otology reported syphilitic involvement of the eighth nerve.

December 14, the patient received an intravenous injection of 0.3 gm. of arsenobenzol, after which he suffered a marked Herxheimer reaction, the temperature rising to 102.8. This, however, was rapidly reduced on the following day. By December 17, the eruption over the body had disappeared and the primary sore was rapidly involuting.

A second and third injection of arsenobenzol, consisting of 0.4 and 0.6 gm., were given, December 20 and 27, respectively, from which the patient showed no reaction.

The patient said he felt excellent, December 28; the rash had entirely disappeared, and he was discharged from the hospital with instructions to continue his treatment in the form of mercurial inunctions.

April 22, 1916, the patient stated in a letter that he was not feeling well; that he tired easily; that his appetite was failing. He had lost considerable weight and had noticed that his eyes and complexion were becoming rapidly yellow. He was advised to return to the hospital for further observation, and appeared, May 2.

At this time the patient looked very ill. He was intensely jaundiced. The liver was markedly enlarged, extending about 4 finger breadths below the costal margin. The enlargement was smooth and fairly firm, the free border of the liver being rounded. The liver was tender to palpation.

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[32] Fischer: Berl. klin. Wchnschr., 1908, **45**, 905.

[33] Rolleston: Diseases of the Liver, Gall Bladder and Bile Ducts, Philadelphia, W. B. Saunders Company, 1905.

[34] Duhot: München. med. Wchnschr., 1911, **58**, 2113.

[35] In addition to the references already given, the following will be found of interest:
Arnheim: Monatsh. f. prakt. Dermat., 1898, **26**, 436.
Brallet: Gaz. d. hôp., 1914, **87**, 1063.
Braunschweig: Med. Klin., 1911, No. 4, p. 137.
Brodfeld, E.: Med. Klin., 1912, No. 43, p. 1742.
Castaigne: Bull. de l'Acad. de méd., 1913, Series 3, **70**, 527.
Chauffard: Presse méd., Aug. 11, 1897, p. 69.
Fagge: Tr. Path. Soc., **18**, 136.
Goldstein: Wien. med. Wchnschr., 1904, **54**, 1862, 1918.
Hutchinson: Med. Times, 1876, p. 136.
Joseph: Arch. f. Dermat. u. Syph., 1894, **29**, 383.
Liebermeister: Deutsch. med. Wchnschr., 1893, **19**, 365.
Marchand: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1895, **17**, 206.
Meder: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1895, **17**, 173.
Melchior: München. med. Wchnschr., 1907, **54**, 2135.
Moxter, cited by Richter (Footnote 9).
Rosenberg: Deutsch. med. Wchnschr., 1912, **38**, 756.
Samberger: Arch. f. Dermat. u. Syph., 1903, **67**, 89.
Sevinoff: Thése de Paris, 1913, Jouvre & Cie.
Stroebe: Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), 1897, **21**, 378.
Thurmwald: Wien. med. Wchnschr., 1901, **51**, 1379.

The spleen was markedly enlarged and firm, extending about 3 finger breadths below the costal margin. It was not tender. The stools were clay colored, the urine markedly tinged with bile pigment. There was a moderate degree of albumin and there were large numbers of granular casts. The temperature was 98.6, the pulse 100.

The patient was at once referred to the department of internal medicine, and during the course of his stay in the hospital was repeatedly seen in consultation with Professor Hewlett, the head of that department. The abrupt onset without gastro-intestinal symptoms, the enlargement of the spleen, the absence of fever, the intensity of the jaundice and the rapid increase in the size of the liver all pointed to icterus gravis occurring in the early months of syphilitic infection, rather than to a simple catarrhal jaundice. Added weight to this diagnosis was given by the associated nephritis.

The patient was placed under observation for six days, during which time no treatment was given. During this period he became progressively worse, was losing weight at the rate of a pound and a half a day, and a marked decrease in the size of the liver was noted from day to day. Calomel injections, 1½ grains intramuscularly, were now instituted with daily saline catharsis. The patient seemed somewhat improved after the first injection, the most marked effect of the mercury being a diminution in the amount of albumin and the number of casts in the urine. By May 15, the albumin had entirely disappeared from the urine, the stools had become bile pigmented and the jaundice was rapidly clearing up. From this time on, inunctions of 6 gm. of mercury daily were instituted to replace the calomel injections. May 18, the patient was given potassium iodid in increasing doses, beginning with 35 grains three times a day. The liver was still somewhat enlarged over the normal, but was no longer tender.

By May 26, the patient was discharged. At this time he was but slightly jaundiced; the icterus was clearing up rapidly; the liver was no longer palpable over the costal margin. The spleen had also receded to normal in size. He felt well. The urinary findings had entirely cleared up.

The patient reentered the hospital, Dec. 4, 1916, with a gumma involving the skin of the face and the submaxillary gland. The liver at this time was normal to percussion and palpation; there was no trace of jaundice. The examination of the urine was negative and the spleen was no longer palpable. Since his discharge from the hospital, and up to two weeks ago, when the gumma appeared on his face, the patient had enjoyed good health.

CHRONIC NEPHRITIS SIMULATING THE SYMPTOMS OF CEREBRAL NEOPLASM

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The symptoms of cerebral neoplasm may be so closely paralleled by other diseases as to make the differentiation very difficult until opportunity has been had for protracted observation and study. Chronic nephritis, for example, may cause all the symptoms of brain tumor. I have seen two such cases recently, and one of them presented so much difficulty of diagnosis that it seems to me desirable to record it.

The patient was an Irishman, aged 57, married, employed as a watchman. The symptoms for which he sought relief had existed about a year. The initial symptom was headache; the pain was principally in the left temporofrontal region. He attributed the pain to an injury which he experienced three years before when he had been knocked down by a bicycle, and had received a wound over the left eye which required nine stitches. Since that time there had always been sensitiveness over the left eye. When the headache began, it would last a few days, and then a considerable period of respite would follow. It gradually grew more severe, and more continuous, and now he is rarely free from it.

The second symptom to develop was vomiting. It began soon after the headache became severe. The vomiting attacks averaged perhaps once a week at first, and more when the headache became very severe. The third symptom to develop was disorder of vision. For years he had experienced occasional diplopia, to which he gave no attention. It is not apparent on what it was dependent. Six months ago when the vision began to fail he consulted a physician who made the diagnosis of beginning optic neuritis. Meanwhile he began to complain of some general weakness, and during the last two months there has been complete loss of copulative capacity. For the past ten years he has had slowness of urination. He rises once or twice at night to void urine.

Latterly, when the headache is very severe, he has felt giddy. There was no history of convulsion or of paralysis.

His symptoms, in brief, were headache, giddiness, occasional unsteadiness in standing and walking, nausea, vomiting, failing vision and general weakness.

The patient was plump, pale and anemic looking, and the facies was suggestive of nephritis cachexia. The pulse rate was 100, the systolic blood pressure 210, the diastolic 165. The arteries were not particularly thickened or rigid on palpation. The heart was enlarged, and its sounds characteristic of chronic vascular hypertonus, but there were no murmurs. The patient had many bad teeth, all bathed in pus, and roentgenoscopy revealed areas of apparent softening around many of them. The third molar on the left side extended into the antrum.

Examination revealed the motor system normal, except that the right lower extremity seemed somewhat weaker than the left, and there was distinct tremor of the extended fingers. The right knee jerk was slightly livelier than the left; the ankle jerks could not be obtained. The plantar jerks were flexor in type and there was no Babinski phenomenon. The abdominal reflexes were present and equal. The epigastrics were sluggish. The arm jerks were quite normal, and there was no digital reflex.

Examination of the eyes revealed slight irregularity of the pupils, the right being 4.5 mm. in diameter, the left 4 mm. They were circular, the reaction to light slightly sluggish, that to convergence good. There existed a considerable degree of ptosis, the result of old trachoma, but otherwise the mobility was normal. Examination of the fundi showed pronounced papilledema. It could not be accurately measured. The right disk was elevated to at least 5 diopters, the left about 3. Vision in the right eye with a plus 3 D. was brought up to 10/200 and in the left eye to 20/70. There was slight opacity of the right cornea, the result of old trachoma. The fields were complete.

Hearing in the left ear was not as keen as in the right. Examination of the left ear showed a mild chronic sclerotic thickening of the middle ear. The internal auditory apparatus was quite normal. The functions of each of the other cranial nerves were unimpaired. There was no disturbance of speech, and the various forms of superficial and deep sensibility were quite normal.

Examination of the blood serum and of the cerebrospinal fluid gave a negative Wassermann reaction, and there were no cells in the latter, but there was an excess of globulin. The fluid escaped through the needle under considerable pressure. Examination of the blood revealed a typical picture of a secondary anemia: the red blood corpuscles 4,936,000, hemoglobin 88 per cent., white blood corpuscles 6,200, polymorphonuclears 75 per cent, transitionals 4 per cent., large lymphocytes 18 per cent., small lymphocytes 2 per cent., and eosinophils 1 per cent.

Sugar tolerance was quite normal. The estimation of nonprotein nitrogen when the patient came into the hospital was 61,100 c.c.; two weeks later it was 52,100 c.c. The urine contained albumin and a few hyaline and granular casts.

During his stay in the hospital the most conspicuous symptom, in addition to the headache, vomiting and choked disks, was vascular hypertonus. The blood pressure fluctuated between 200 and 270, the systolic averaging about 230. A few days after entering the hospital he had an elevation of temperature to 102 F. and symptoms of a cold. He developed profound dyspnea, but all the symptoms yielded very promptly to active purgation by calomel and salines.

The Roentgen examination of the skull showed a normal sella turcica, but the frontal and ethmoid sinuses and both antrums showed cloudiness.

The evidences of chronic nephritis were vascular hypertonus, polyuria, the findings of the urinalysis, the secondary anemia, the cachexia, dyspnea, headache, vomiting and the choked disks. The last named was the unusual symptom.

The patient was put on a lactovegetarian diet, made to drink 60 ounces of water slightly alkalinated by the addition of sodium bicarbonate, given $1/60$ grain of calomel three times a day, and in addition to this he had hot blanket packs and carbonic acid baths on alternating days, and general massage. While he was taking this treatment the symptoms mitigated: the headache diminished in frequency and severity, the vomiting ceased, and his general strength and vitality showed decided improvement. He remained in the hospital three weeks and was then discharged. At the present time, four months after the treatment, his improvement still continues in every respect. The elevation of the disks has subsided but has not completely disappeared, and the ophthalmoscope shows now a fairly typical picture of retinitis albuminurica.

The symptoms of which the patient complained were the classical symptoms of brain tumor, or at least of increased intracranial pressure, and they developed in what may be called the typical way. Taking into conjunction the fact that they had their beginning somewhat more than two years after he received an injury to the skull, a thing not unusual in the history of brain tumor and considered important both as an exciting and a determining factor, it was almost imperative to give that diagnosis full consideration. Naturally it is quite within the grounds of possibility to have a neoplasm developing in a person who has chronic nephritis. In this case it is not necessary to assume such duality of disease, as the vasculorenal disease is quite adequate to account for all the symptoms, including the papilledema.

We accustom ourselves unconsciously to feel that choked disk means increased intracranial pressure incident to brain tumor, abscess, sinus thrombosis and fracture of the skull, and so it does in the majority of instances; but it should never be forgotten that it occurs in a score of other diseases: myelitis and disseminated sclerosis; infectious diseases, such as whooping cough and erysipelas; hemic disease, such as chlorosis, leukemia and scurvy; in disease the result of disordered internal secretion, and in states of intoxication such as from lead and quinin.

Although it seems to be a matter of common knowledge that choked disks occur at times in persons suffering from chronic nephritis, there is very little reference made to it in the literature, for instance, in the work entitled "Die Neurologie des Auges," by Wilbrand and Saenger. No reference is made to it in the volume entitled "Die Erkrankungen der Papilla Nervi Optici." Gowers, whose work on medical ophthalmoscopy, written a third of a century ago, is still a remarkably safe guide, does not mention it. Dr. James B. Herrick, writing on chronic nephritis in Osler's "System of Medicine," makes only casual reference to it, in the following sentence: "The severe headache (of chronic interstitial nephritis) accompanied as it often is with nausea, vomiting, dizziness and perhaps some mental disturbances, may resemble the symptom complex of tumor of the brain, especially when an inflamed and swollen optic disk is discovered." On the other hand, the occurrence of choked disk in chlorosis is referred to in the literature frequently. I have readily found references to it as far back as 1840, when Prael[1] published an interesting account of it. It may quite well be that the papilledema in cases of chronic nephritis may be incident to the secondary anemia of that disease. It is worthy of note that it has frequently been remarked that the cerebrospinal fluid comes out under pressure in cases of anemia attended by optic neuritis. In the case herewith described the fluid was under very considerable pressure.

If papilledema is the result of increased pressure of fluid in the vaginal sheath of the optic nerve, the pressure may in this case be the manifestation of edema, such as occurs in other parts of the body constantly in chronic nephritis. If we assume that this is the true explanation of the pathogenesis of the condition, the papilledema should subside under the use of measures which facilitate the disappearance of edema in other parts of the body. If, on the other hand, the neuritis is the result of the activity of toxic matter acting on the termination of the optic nerve, it is not likely that it will subside, for unfortunately we are not in a position to do the work of the kidneys artificially or vigorously.

37 West Fifty-Fourth Street.

DUODENAL ULCER AND TETANY*

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History.—A man, aged 28, complained of "stomach trouble," present periodically since boyhood, and progressively worse during the last few years. At first a hot drink gave relief. For the past year he had had sharp epigastric pain, irregular in onset, with no special relation to meals. If he retired early, however, the pain occasionally wakened him at midnight, that is, six hours after supper. If he was up late and ate on retiring, he usually slept until 3 or 4 a. m. Eating seemed to ward off the pain. He had had no nausea, vomiting, pain in the back, hematemesis or bloody stools. When in high school his weight was 182; it was now 158, of which he had lost from 10 to 15 pounds within the past year. Fifteen months before, the patient had been under the care of a physician who suspected ulcer, but on negative stools and roentgenograms, ruled it out.

The patient's hours of work in a small candy store were irregular: one week from noon to 11 p. m., and on alternate weeks from 8 a. m. to 6 p. m. This made his meals irregular. He ate considerable candy during idle moments.

Examination.—The patient was well developed and well nourished. He had small atrophic tonsils with a few cheesy crypts, no pyorrhea, many fillings, and no other areas of possible focal infection. There was no lymphadenitis. The abdomen was dull in both flanks, and the colon filled with palpable fecal masses. There was no tenderness or muscular rigidity. The urine was negative, except for a positive urobilin test.

Gastric contents removed forty minutes after a test meal and six hours after a breakfast containing prunes yielded 350 c.c., with free hydrochloric acid, 44; combined hydrochloric acid, 25; total acidity, 72; no gross or occult blood, and no remains of breakfast. It was otherwise negative. A second test gave 200 c.c., with free hydrochloric acid, 70; combined hydrochloric acid, 16; total acidity, 87, and otherwise negative.

Diagnosis.—Duodenal ulcer was suggested by the periodicity, hunger pain and hyperchlorhydria, though the absence of hemorrhage prevented an absolute statement. The absence of visible distention or peristalsis, as well as of food stagnation, as determined by test meals, seemed to exclude organic pyloric obstruction. The pain, itself, was thought to be due to pylorospasm with some retention after a full evening meal.

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[1] Prael: Monatschr. f. med. Augenh. u. Chir., 1849, 3, 187-190.

* Read before the General Meeting of the San Francisco County Medical Society, Nov. 14, 1916.

Treatment and Course.—The patient refused to go to bed, quit work, or have a Roentgen examination at this time, so that a Sippy treatment was impracticable. A diet of cream, cereal, vegetable purées, soft eggs, etc., was taken at short intervals, with powders containing calcined magnesia, soda and bismuth, midway between feedings. Regulation of hours and meals was insisted on.

Two months later the patient reported improvement, but complained of sharp pains in the chest at about 4 a. m. relieved by induced vomiting. The bowels were constipated. In addition to the former powders he was given capsules of belladonna, rhubarb, soda and cascara. Three weeks later he felt much improved except for some gastric distress at the same hour in the morning, still relieved by vomiting. His blood at this time showed: hemoglobin, 86 per cent.; differential: polymorphonuclears, 64 per cent.; mononuclears, 3 per cent., lymphocytes, 25 per cent.; eosinophils, 5 per cent., and basophils, 2 per cent. The stool was free from occult blood.

The patient still refused to enter a hospital or have a Roentgen examination, but finally a roentgenographic report was discovered of an examination eighteen months previous. At that time the roentgenographic diagnosis was: "No roentgenologic signs of gastric ulcer. Question as to duodenal ulcer. Difficult to give opinion on duodenum as the bulbus does not stay filled. Observations are, however, consistent with the clinical diagnosis of duodenal ulcer."

One month later and three and a half months after his first consultation, word was received that the patient was ill in bed. Vomiting had come on suddenly and was persistent. He was taken immediately to a hospital. Examination the same evening revealed that he was much thinner than when last seen. The abdomen was flat and somewhat retracted. There was a definite slight prominence in the epigastrium due to a distended stomach. No peristalsis could be seen. The Lenhartz treatment was instituted. On the following day he was perfectly comfortable, but that evening had an attack characterized by intermittent, bilateral, painful muscular contractions of the upper extremities, during which his hands assumed the typical tetany position. His stomach was washed, and 1,700 c.c. of greenish fluid removed, with relief of symptoms.

A test meal revealed: free hydrochloric acid, 10; total acidity, 30; no lactic acid; benzidin positive, guaiac negative. The urine contained albumin, indican, hyaline, granular and blood casts and red blood cells. With the patient standing, the stomach filled with water extended 2 inches below the umbilicus, with the upper border midway between the ensiform cartilage and the navel. The same position obtained on reclining. The stomach area was rather distended; no peristalsis was seen, though there was a question as to tetanic contractions of the stomach wall, first on the right, and then on the left of the median line. Trousseau's sign was present on the left side. Chvostek's sign, which was present in the preceding attack, was not now obtained.

The treatment consisted of a milk diet and calcium lactate in large doses.

Fluoroscopy, six and a half hours after bismuth ingestion, revealed a very small residue of bismuth in the greater curvature, which was considerably below the level of the pelvic brim. The examination was interrupted several times by attacks of tetany, the patient becoming rigid, the hands and arms assuming and remaining in the typical tetany position, and the abdomen retracted. This lasted for ten minutes without loss of consciousness, but with inability to speak. The stomach filled normally, the cardiac half delaying a few seconds. Very marked peristalsis was seen. The stomach at first assumed an hour-glass form, the division occurring one third of the way from the pyloric end. Examination was interrupted two or three times, but each time strong peristalsis was noted, and though the duodenal cap was readily seen, no bismuth passed into the intestine. The patient was then given atropin and again examined by the fluoroscope. No peristalsis was then observed and the stomach had flattened out, the bismuth being evident only in the greater curvature. When crackers were given, slight, barely visible waves of peristalsis were noted in the greater curvature, but none so definite as before the atropin administration. No defects could be determined in the substance or the outline of the stomach.

On the following day the patient vomited but once and had no tetany. The pupils were dilated. Trousseau's sign was easily obtained; Chvostek's sign was present. Schlesinger's leg phenomenon was not elicited. The tendon reflexes were normal. There was slight difficulty in starting the urine. There were no myotonic symptoms or so-called intention spasms. No peristalsis was seen in the abdomen. Stomach tympany apparently was somewhat higher. The blood pressure was normal. Blood examination revealed: hemoglobin, 120 per cent.; red blood cells, 5,940,000; white blood cells, 13,400; polymorphonuclears, 77 per cent.; lymphocytes, 10 per cent.; large mononuclears, 10 per cent.; degenerated, 3 per cent.

In another day the patient was much better, and no symptoms of tetany could be detected. In view of the apparent benefit following its administration, atropin was pushed to physiologic effect.

The patient was somewhat restless and mumbled in his sleep that night. He retained the nourishment and had no pain. Examination revealed moderate dilatation of pupils, and no peristalsis, distention or signs of tetany. Slight dermographia was present. Late in the afternoon the atropin effects had disappeared. The patient showed a tendency to doze, and when awakened made no effort to converse. Two days of decided improvement followed and he gained 1 pound in weight.

The patient progressed well until the morning of May 22, 1916, when he complained of a little nausea. Examination then revealed the stomach considerably dilated and peristalsis visible in large waves. The patient was nauseated, and lavage brought away a large quantity of food and fluid. In addition to lavage the treatment now consisted of a Lenhartz diet and increasing doses of the tincture of belladonna.

Two days later the patient vomited twice. Examination of the urine revealed: albumin, 0.5 per cent.; bile reaction, faint; hyaline, granular (fine and coarse) casts; also question as to blood casts; red and white cells. The treatment now was felt to be ineffective, and surgical intervention seemed indicated. The next day the patient had painless contraction of the hands and arms, and vomited in the afternoon. Myotonic phenomena, Trousseau's sign and Chvostek's sign were all present. The pupils were moderately dilated. The stools showed no blood. Examination of the urine revealed a faint cloud of albumin, no indican, no acetone, no diacetic, no urobilin and many hyaline casts.

On the following day the patient was delirious, cyanosed and mentally clouded.

Operation.—This was performed under novocain, gas and oxygen. Signs of chronic peritonitis were found. The stomach was in spasm, the finger barely passing the pylorus. No ulcer was found. Gastro-enterostomy was done. When the bowel was handled or exposed, an interesting condition was noticed. With an entire loop of small intestine completely collapsed, the adjoining portions would be normally distended with a clear line of demarcation between the two. After a few moments the dilated portion would collapse and the collapsed loop would expand.

The patient died on the day following operation. A partial necropsy showed the appendix free, containing a few small concretions, not ulcerated or inflamed. The liver, spleen and pancreas were normal. The gallbladder was normal, with no stones. The gastro-enterostomy wound was clean.

Pathologic Report (by Dr. J. V. Cooke).—"Thyroid gland is of normal size and appearance. On section it is reddish brown and there is no increase in colloid. The fibrous tissue is not increased in amount. The stomach has been opened and a portion cut away. The mucosa is negative. Just above the pylorus along the lesser curvature there is a pouchlike dilatation 1 cm. in depth and 3 cm. in diameter. This is lined by mucosa and the wall slightly thinned. The pyloric ring is stenotic and just admits the tip of the little finger. On section there is fibrous tissue in the wall at this point and the consistency is firm and tough. No scarring is noted at this point. Immediately below the narrowing ring, there is a clean-cut, slightly elongated ulcer in the first portion of the duodenum. This measured 1 by 2 cm., and the base is of a greenish color. There is no perforation at this point, but the base of the ulcer is very thin:

"Microscopic Examination: Duodenum: Sections through the ulcer show a clean-cut peptic ulcer in the duodenal mucosa, extending through Brunner's glands. The base of the ulcer is composed of granulation tissue, which forms a rather thick layer at this point. A portion of the head of the pancreas, seen in the section, shows granulation tissue around it, and this granulation tissue can be traced to that at the base of the ulcer.

"Thyroid Gland: Sections show flat epithelial lining regular acini, which are filled with colloid. The interstitial tissue is not increased.

"Parathyroids: Sections show normal appearing cells of Type 1, the so-called principal cells. No eosinophilic cells (Type 2) are seen in the sections studied. There are no interstitial hemorrhages, nor is there any increase in interstitial connective tissue."

COMMENT

Here was a young man with a history suggestive of duodenal ulcer, with gastric hyperacidity as a sole objective finding. As he did not permit full investigation, medical treatment seemed justified until such time as better methods could be employed. No operative interference could be urged, especially in the absence of more definite findings. Many ulcers are cured by medical measures. Even very chronic ones may be benefited, if not cured, without surgery. The patient was next seen after one month with marked pylorospasm, gastric dilatation, vomiting and tetany. Immediate surgical intervention was considered. In a paper[1] on the treatment of gastric and duodenal ulcer written two years before, I said: "In cases of gastric tetany, operation should be performed as soon as the diagnosis is made, unless the stenosis causing it be due to spasm. Medical treatment is usually of no avail; surgery frequently relieves it immediately, or in a short while." On the other hand, we had known patients with supposed gastric tetany to get along without operation. One, a woman with a typical pyloric ulcer with periodic attacks of hunger pain, hematemesis, etc., had definite attacks of tetany with pylorospasm first in 1912 and again two years later. On both occasions she refused operation and recovered, at least so far as the tetany was concerned. Another woman with gastric dilatation and tetany lived for a number of years, only to die from chronic spinal disease. Rodman[2] reported a case in which tetany supervened eleven days after a perfectly satisfactory drainage operation had been performed.

Consultants and family in the case under discussion all favored medical measures. We could not promise a surgical cure, nor could we convince ourselves that the pylorospasm might not be part of the tetany.

According to Falta,[3] in a great number of cases of tetany, slight or severe disturbances in the function of the gastro-intestinal tract have been demonstrated. In one category of cases, tetany develops in persons who have long complained of the most diverse forms of gastric or intestinal affections, especially those in whom there is an associated high-grade stagnation of the gastro-intestinal contents. With the onset of the tetany, the gastro-intestinal symptoms may increase markedly. Abnormally rapid emptying of the stomach is occasionally seen with the Roentgen-ray screen. In some cases there is a marked pyloric spasm in the acute stage that leads to acute dilatation of the stomach.

It is probable that the tetany increases the pyloric spasm, or in many cases directly brings it about. Hourglass contractions have been observed during attacks of tetany in patients whose stomachs were apparently normal at other times and who never presented symptoms suggestive of ulcer. These belong to a second category, that is, those whose gastro-intestinal disturbances occur at or after the outbreak of the tetany, these disturbances being, as it were, but one symptom of the tetany.

In many cases the tetany promptly disappears when the stagnation is combated by thorough washing out of the stomach, if this can be borne. Many writers favor this line of treatment. Calcium, too, is often recommended. Munroe[4] writes: "It may at least be suggested that no patient should be operated on for dilatation until proper remedies have been used for balancing vagotonic and sympatheticotonic conditions." In this case both of the foregoing were tried. The result was apparently good—for a time. Atropin controlled the pylorospasm and allowed the stomach to empty better; it was therefore used, apparently with benefit—for a time. And then, after almost two weeks of observation, when we were most hopeful, there was a turn for the worse. As a last resort, consent was obtained to operate. "The operation was successful, but the patient died."

So, no doubt, it often has been in cases of gastric tetany.

In 1907 we saw a man, aged 26, enter the hospital with a history of recurrent attacks of pain and vomiting over a period of years, with a long record of gastric lavage and a recent onset of tetany. He was to have been "explored" the next day, but had an attack of tetany that night, fell on his head, and died. At necropsy no skull injuries were found, only a healed pyloric ulcer with stenosis and gastric dilatation.

CONCLUSIONS

1. Tetany may occur in cases of gastric dilatation associated with pyloric spasm or stenosis.
2. It may occur most unexpectedly, and in spite of fairly close observation.
3. The prognosis in any case of gastric tetany is bad.
4. The mortality is greater in cases treated medically than in those treated surgically.
5. It would seem wise to operate at once in the presence of symptoms of tetany of presumably gastric origin. The surgical procedure would depend on the lesions found.
6. Medical measures should be instituted after the operation.

350 Post Street.

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[1] Bine and Schmoll: The Treatment of Gastric and Duodenal Ulcer, California State Jour. Med., September, 1914.

[2] Rodman, W. L.: Gastric Tetany, The Journal A. M. A., Feb. 21, 1914, p. 590.

[3] Falta, Wilhelm: The Ductless Glandular Diseases, Philadelphia, P. Blakiston's Son & Co., 1915.

[4] Munroe, J. P.: Chronic Tetany, The Journal A. M. A., Aug. 14, 1915, p. 599.

Improvement in Retarded Children.—That a child grades below the average by formal tests is not an infallible sign that he will never develop beyond the mental attainments of a child. An analogy is found in the retarded physical development of certain children.—Treadway, *Pub. Health Rep.*, Nov.

ABSCESS OF THE SPINAL CORD

WITH REPORT OF A CASE *

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DETROIT

Abscess of the spinal cord is so rare a condition, presents so irregular a clinical picture, and involves such interesting and difficult problems in diagnosis that this case has seemed to be deserving of full report:

A. J., man, teamster, was admitted to Harper Hospital, Sept. 28, 1916, complaining of a motor impairment of the left leg of twelve days' duration. The personal and family history were negative. Though five children had died at birth, only one living two hours, venereal disease was denied and the patient's Wassermann test was negative.

He had been a pretty steady user of alcohol, ordinarily drinking four or five bottles of beer daily, and on the Saturday night, twelve days prior to his admission, he had drunk more heavily than usual. About 10 p. m. of this day, he experienced a numbness in his left leg, and he could walk only with difficulty. The next day, he felt better but he limped for several days and then complained of pain in the left abdominal region. From then on, the motor impairment of the left leg had been progressively worse, necessitating a sidewise dragging of the left foot in his attempts to walk. The abdominal pain on admission was present only when he sat up or moved, and did not seem to be acute. Bladder control had been difficult for three days, and there was slight dribbling of the urine. Examination disclosed some pyorrhea alveolaris and also suppurating lesions of the hands which, he said, had followed the bite of a horse. There were no enlarged glands, and the epitrochlears were not palpable. The chest and the abdomen were practically negative, as also were tests of special sense. Sensory examination disclosed no changes in the arms, but over the abdomen were indefinite areas in which pain sense seemed diminished, and over the legs also pain sense was less acute than normal. Tactile sense was unimpaired. There was almost complete loss of motor power of the left leg, the right leg was unimpaired, and no other motor symptoms were noticed.

The arm reflexes seemed increased in activity, the knee jerks and the Achilles jerks were hyperactive, and clonus was easily elicited on both sides. There was no Kernig sign, there was a suggestion of a Babinski, and there was no ataxia.

The blood count revealed: white blood cells, 12,400; red blood cells, 5,120,000; hemoglobin, 90 per cent. The lesions of the hands yielded a culture of a staphylococcus.

September 30, numbness of the right leg complained of, and reflexes on both sides were elicited only with difficulty, response being very slight.

October 1, there was quite complete paralysis of the right leg as well as the left, and reflex response was hardly perceptible.

October 3, the reflexes were still less, there being a questionable clonic response at the left ankle, complete paraplegia, and there was analgesia from the level of the twelfth dorsal vertebra down. Tactile sense of the lower extremities was good, showing well marked dissociation of sensation. Abdominal, cremasteric, knee and ankle reflexes were absent. The pupils were equal and stiffly responsive. Roentgenologic examinations, October 3 and 7, were negative. The temperature curve was such as to point to the existence of some infectious process.

The analgesia remained for several days at the level of the twelfth dorsal vertebra, but later slowly ascended. The bladder was involved in the motor paralysis, and frequent catheterization was necessary. The blood count and the clinical course of the disease pointed to the existence of an infection involving the cord, and it was hoped that surgical interference might possibly reach and drain the infected focus.

October 7, laminectomy was done by Dr. A. D. McAlpine, the fifth, sixth, and seventh dorsal laminae being removed, the dura was incised, and the region carefully explored above and below but with negative results. The cord itself was not incised or explored.

October 9, there was anesthesia to the level of the nipples, and the arm reflexes seemed less active than normal. From this time on, there was little clinical change aside from gradual failure. Spinal puncture had yielded a turbid fluid, and from this a staphylococcus had been grown in culture.

There was progressive failure, a terminal bronchopneumonia, and cystitis. The patient died, 3:45 p. m., October 25. Lumbar puncture was at once repeated, and cultures from the spinal fluid yielded *Staphylococcus albus*.

Necropsy was done at 5 p. m. by Dr. Plinn F. Morse, pathologist. The body was slightly emaciated, but generally well nourished, still warm, showing a large gangrenous slough in the gluteal region, and the right heel threateningly black from trophic disturbance. The spinous processes and laminae of all the vertebrae were removed and the cord detached from below upward to the foramen magnum.

The cord, sectioned from above downward, showed macroscopically nothing of especial interest in the cervical region, but in the upper dorsal region, the anterior horns appeared increasingly injected as section proceeded downward. The lower seven inches of the cord showed the central portion filled with thick, creamy pus, this accumulation being broader in area as we proceeded downward—the tissue of the cord being much encroached on toward its terminus.

The results of further examination are given in the pathologist's report (by Dr. Morse):

"Sections of the cord taken from the dorsal region show complete degeneration of the posterior columns. Extreme edema at the entrance root zone, with a necrosis of the axial portion of the posterior nerve root. The blood vessels of the gray matter show marked round-cell infiltration. The rest of the cord at this level is fairly normal, except for edema. Sections taken at the level of greatest softening show complete disintegration of all the columns of white matter; complete disappearance of the anterior horn cells of the gray matter and, in general, complete necrosis of the cord as a whole. The posterior root ganglia in some areas show focal necrosis of the centers, and in regions contiguous to this, we find marked round-cell infiltration of the pia mater."

COMMENT

Difficulties of diagnosis were not few in this case. The rapid onset of the motor and sensory paralysis immediately following alcoholic excess at first suggested the possibility of a toxic cause, but later the clinical aspects of the case were such as conclusively to prove that the process was an infectious one. The dissociation syndrome, which persisted for several days, pointed to the probable involvement of the central portion of the cord, but this symptom had disappeared with further encroachment on the other tissues of the cord. The laminectomy still left us in the dark, the operating surgeon not deeming it wise to attempt even careful exploration of the cord itself. Several diagnoses were hazarded, but the clinical history seemed to point to an infection of the cord, which had at first encroached on the posterior columns and then involved a transverse myelitis at the seventh dorsal segment.

As to the possibility of reaching and draining such an abscess, Elsberg under recent date writes me:

> Too bad that the cord was not aspirated, for the abscess could surely have been found and drained. I feel positive that the time will come when this will literally be done in these rare cases. Of course, there is no reason why an abscess of the cord could not be satisfactorily drained just as well as an abscess of the brain.

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* Read before the Detroit Society of Neurology and Psychiatry, Feb. 1, 1917.

* On account of lack of space, this article has been abbreviated in The Journal by omission of a review of the literature. This will be included in the reprints, a copy of which may be obtained on application to the author.

Abscess of the cord is thus shown to be of rare occurrence and of irregular clinical picture, this depending largely on the level and extent of the myelitic process caused by the infection and the amount of destruction of cord tissue involved.

The case reported seems clearly one of metastasis from the suppurative lesions on the hands, a staphylococcic infection following the bite of a horse.

1501 David Whitney Building.

UNTOWARD RESULTS OF PROPHYLACTIC TYPHOID IMMUNIZATION

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In view of the great frequency with which typhoid vaccination is nowadays performed, and the comparative ease and safety of the procedure, I believe it is wise to bear in mind that untoward results may follow typhoid inoculation, as in the case herewith reported, with the idea, not of paralyzing activities in this direction, but that it is necessary to take proper precautions with patients who are inoculated with typhoid vaccine. I believe that patients who receive the vaccine should be instructed to go home and not to their vocations, where the sudden appearance of certain mental and nervous symptoms would jeopardize their lives.

History.—W. S., man, aged 24, was one of thirty-three senior students who presented themselves on the morning of Oct. 28, 1916, for the routine typhoid vaccination. He received the same as the other students, 500 million bacilli of the U. S. army strain, nonsensitized, and prepared in the usual manner. The same vaccine from the same bottle and the same technic were employed with this student as in the other thirty-two. The thirty-two students presented the usual signs and symptoms of reactions after typhoid vaccination. The patient, on the other hand, presented the following rather unusual symptoms:

Twenty minutes after the subcutaneous injection of the vaccine he felt weak all over the body, especially in the lower extremities. A sensation of chilliness and a dull headache set in. These symptoms were progressively becoming more severe, until one hour after the injection the patient began to shake violently over the whole body, and he had an unbearable throbbing headache. Then the rather unusual symptom of continuous vomiting set in. The vomitus was at first slimy mucus, and then mucus and blood, which was bright red. The soreness all over the body became extreme and the joints exceedingly painful. The temperature was 103, pulse 100 (normal 60). The vomiting, the painful joints and soreness all over the body persisted for forty-eight hours. He remained apathetic for forty-eight hours, during which time anorexia and polydipsia were marked. The stools were yellow and watery. The urine was red and contained blood. At the height of the illness the patient was in extreme collapse. The temperature continued high for seventy-two hours with slight morning remissions; it was about 101 in the afternoon. The pulse ranged from 90 to 96. There was no nose bleed. On the second day the spleen became palpable, and on deep inspiration was felt one finger's breadth below the free costal margin. The liver edge was palpable below the costal margin. The glands in the neck, axilla and groin were decidedly enlarged; those in the axilla were very tender. The convalescence lasted one week, the patient complaining of dull headache and severe pain in the bones of the legs.

The local reaction was very slight and consisted of redness and slight tenderness. The liver, spleen and lymphatic glands remained enlarged for one week and then gradually subsided. If the patient had suffered from a regular course of typhoid he could not have fallen away more or looked worse. He was exceedingly feeble.

Laboratory Findings.—In the urine there were large quantities of blood. The diazoreaction was negative; four tests were made; the first one on the fourth day after the vaccination. There were no other pathologic findings.

Blood examination before the vaccination revealed: total red cells, 4,900,000; total white cells, 7,800; differential count: polymorphonuclears, 74 per cent.; small lymphocytes, 20 per cent.; large lymphocytes, 3 per cent.; transitionals, 2 per cent.; eosinophils, 1 per cent. After vaccination (four days following injection): total red cells, 4,700,000; total white cells, 7,600; differential count: polymorphonuclears, 65 per cent.; small lymphocytes, 32 per cent.; large lymphocytes, 3 per cent.

The Gruber-Widal test on the fourth day after vaccination revealed loss of motility but no clumping.

In view of the severity of the reaction, the presence of blood in the vomitus and urine, and the general collapse which followed, it is hardly necessary for me to say that I did not give the patient the second and third injections.

The previous history of the patient was absolutely negative. He never had typhoid or any other disease. He is not subject to hives or any other rashes. He does not suffer from asthma or hay-fever. He does not present symptoms of anaphylaxis when around horses, cats or dogs. He is not sickened by eating shellfish or any other food with the exception of ice cream, which even in minute amounts sickens him, and the mere smell of it nauseates him. He has never before received typhoid vaccine. From the foregoing it is therefore difficult to determine what has sensitized him against the protein of the typhoid bacillus. I do not doubt for a moment that sensitization or anaphylaxis was responsible for the symptoms.

ENDEMIC INDEX OF MALARIA IN THE NORTHERN SACRAMENTO VALLEY, CALIFORNIA

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Although for many years malaria has been known to be prevalent in the great central valleys of California and the foothills adjacent to them, no systematic attempt has been made to study the types and endemicity of the disease prior to 1915. However, W. B. Herms,[1] associate professor of parasitology in the University of California and consulting parasitologist of the California State Board of Health, has done a large amount of educational and mosquito control work. Early in 1915, Dr. K. F. Meyer[2] and Dr. E. L. Walker, associate professors of tropical medicine in the George Williams Hooper Foundation for Medical Research, began an investigation in order to determine the endemicity of malaria and the types of mosquitoes involved. After several weeks this investigation was discontinued.

In September, 1915, after conferring with Professor Herms, we submitted to Dr. W. A. Sawyer, secretary of the California State Board of Health, a plan for the investigation of malarial conditions in the state. This plan, based largely on the malarial investigations made by the United States Public Health Service, included the taking of blood specimens from persons in several towns in both the Sacramento and San Joaquin valleys in order to determine the endemic index of malaria. We decided to take specimens from schoolchildren only, so that it would be possible to take a second set from persons of the same age and environment after control measures were instituted.

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[1] Herms, W. B.: Malaria, Cause and Control, New York, the Macmillan Company, 1913; Successful Methods of Attack on Malaria in California, California State Jour. Med., May, 1915.

[2] Meyer, K. F.: Sources of Malaria in California, Tr. Commonwealth Club of California, San Francisco, 1916, **11**, 22.

On account of other and more urgent investigations, this plan has not yet been completely carried out; but we wish here to report the findings at Orland, Glenn County, and Redding, Shasta County, both in the Northern Sacramento Valley. The population of Orland was 836 and Redding 3,572 according to the 1910 census. The accompanying tables give a comparison of the results found in the two towns.

The malarial index of 4.7 per cent. is low in comparison with von Ezdorf's[3] findings in some of the southern states: Alabama 11.4 per cent., Arkansas 10.1 per cent., North Carolina 7.8 per cent., South Carolina 11.9 per cent., Mississippi 31.2 per cent., and Virginia 9.3 per cent. However, several dissimilarities in the methods of determining the index must be taken into consideration. Specimens were taken by us from schoolchildren only and thin smears were used exclusively, while von Ezdorf took specimens from the general population and used thick as well as thin smears. Taylor[4] found only one-fourth as many positive specimens using thin as he did using thick smears, so it is possible that by using the latter method our positive findings might have been increased, though at least half an hour was spent in the examination of each smear before reporting it negative.

TABLE 1.—FINDINGS AT ORLAND AND REDDING

Town	Number Examined		Total Examined	Infected Number		Total Infected	Types of Infection			Percentage Infected
	Male	Female		Male	Female		Tertian	Quartan	Estivo-Autumnal	
Orland	181	192	373	1	3	4	3	0	1	1+
Redding	228	207	435	21	14	35	17	1	17	8+
Totals	409	399	808	22	17	39	20	1	18	4.7

TABLE 2.—DISTRIBUTION BY AGES

Age	Orland			Redding		
	Examined	Infected		Examined	Infected	
		No.	Per Cent.		No.	Per Cent.
Under 10 years	171	2	1+	103	5	5—
From 11 to 15 years	139	1	0.7	158	21	13+
Over 15 years	63	1	1+	174	9	5+

The relatively high percentage of estivo-autumnal infections is of interest, particularly in Redding, where the number of cases of this type was the same as the tertian. This is higher than the percentage reported by von Ezdorf, who found two tertian for every estivo-autumnal infection.

The finding of one quartan out of thirty-nine infections and 808 examinations may have been merely accidental, as von Ezdorf found only three out of 2,391 infections and 16,114 examinations. We[5] have already reported the finding of a district near Redding in which the quartan type of malaria was prevalent, and although the child, found to be harboring *Plasmodium malariae* by the present investigation, did not come from this district, it is very possible that she may have visited it at some time, as it is located only a short distance from the town.

In this investigation we found the percentage of carriers to be highest between the ages of 11 and 15, the percentage for this period being double that below 11 or over 15.

Therapeutics

DISTURBANCES OF THE KIDNEYS

(*Continued from page 1258*)

UREMIA

The symptoms of uremia are the same, whether it is caused by acute or chronic nephritis. Ordinarily, when uremia is imminent, premonitory symptoms occur, such as severe headache, fulness of the head, dizziness and eye blurs, or "turning black before the eyes," as the patient describes it; there may be muscle twitchings, muscle cramps, restlessness, sleeplessness or drowsiness; there is often nausea, vomiting, and diarrhea—Nature's method of improving the condition. The blood pressure increases, and may be very high. The urine shows a decreased output of solids, especially of nitrogen, and the blood shows retained nonprotein nitrogen. The Babinski sign, as first pointed out by Curschmann,[109] is a prognostic sign of impending uremia, and probably occurs from the irritation of toxins on the cerebral centers. It is probable that in all cases of uremia, disturbances of the liver function play some active part. The liver forms urea out of ammonium salts. Exclusion of the liver in animals prevents the formation of urea, and death soon occurs, generally preceded by convulsions. When the liver function is disturbed by any disease, the poisons resulting from metabolism are not well detoxicated. Urea may be diminished in amount, and it has been suggested that ammonium carbonate remains in the blood, and that ammonium salts are irritant to the central nervous system. If the organic sulphates and indican are increased in the urine there may be an abnormal amount of substances circulating in the blood which are irritant to the central nervous system and which sooner or later cause disease.

It may also be well here to caution against the use of the urea test of kidney function in conditions in which uremia is feared. Twenty gm. of urea, which is the dose for a urea test, should normally be eliminated in one and one half days. In nephritis the excretion may be greatly delayed or the whole amount may be retained. Hewlett, Gilbert and Wickett[110] have recently shown that in normal persons the administration of considerable amounts of urea by the mouth may greatly increase the urea content of the blood and cause such symptoms as "headache, dizziness, apathy, drowsiness, weakness and fatigue," the very symptoms which are premonitory of uremia. This shows how little extra nitrogen waste will cause imbalance of nitrogen metabolism in nephritis, and is the reason that chilling, extra muscular exercise, a high protein meal, or nervous and mental excitation, such as may occur during an after-dinner speech, a lecture, or after a controversy, may precipitate a uremic attack. This fact is daily verified by newspaper reports concerning prominent public men. An attack may be precipitated apparently out of a clear sky, without forewarning edema or other symptoms of kidney insufficiency. Such precipitate uremia usually occurs with the so-called interstitial variety of nephritis, and is often fatal.

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[3] Von Ezdorf, R. H.: Endemic Index of Malaria in the United States, Pub. Health Rep., 1916, p. 819.

[4] Taylor, H. A.: A Comparative Study of Thick and Thin Blood Smears for Diagnosis of Malarial Fevers, The Journal A. M. A., March 10, 1917, p. 771.

[5] Geiger, J. C., and Kelly, F. L.: Plasmodium Malariae (Quartan)—A Type New to California, California State Jour. Med., 1916, 14, 198.

[109] Curschmann, H.: Munchen. med. Wchnschr., Sept. 26, 1911; abstr., The Journal A. M. A., Nov. 4, 1911, p. 1576.

[110] Hewlett, A. W.; Gilbert, Q. O., and Wickett, A. D.: The Toxic Effects of Urea on Normal Individuals, Arch. Int. Med., November, 1916, p. 636.

Uremia may occur in chronic nephritis when the pathologic condition is largely interstitial, without the presence of albumin and casts in the urine. Mild uremic attacks may not be fatal in chronic nephritis; all the symptoms of uremia may cease, and the patient may long be free from them, although ordinarily they will again recur until the fatal issue. In acute nephritis, even a severe attack of uremia with convulsions and coma may not be fatal, and the patient may completely and entirely recover. The prognosis, however, is always serious and generally dire; but one should never give up hope of saving the patient. However, when chronic nephritis has long been present and the patient has had repeated slight attacks of uremic symptoms, when true uremia finally develops the outcome is usually fatal.

A recent investigation by Chace and Myers[111] shows that increase of the uric acid in the blood is suggestive of incipient nephritis; that changes in the amount of urea in the blood in nephritis is a dependable indication of the condition of the patient, and that a large increase in the creatinin of the blood is of serious import, more than 5 mg. of creatinin in 100 c.c. of blood indicating an early fatal outcome, the creatinin content of the blood increasing rapidly just before death. Morse[112] has shown that the creatin is normally greatly increased in the urine after childbirth.

The symptoms indicative of uremia are: hypertension (a diastolic pressure of 120 is usually indicative of a serious kidney condition); headache (generally occipital or frontal); restlessness, or, sometimes apathy and somnolence; ringing of the ears; eye blurs; muscle twitching; cramps; coated tongue; nausea; vomiting; dry skin; odor of urine from perspiration and skin; dyspnea; finally, convulsions and coma.

The intensity of the foregoing symptoms varies, of course, with the degree of uremic poisoning, and the condition may frequently be aborted by proper treatment in its incipiency. When several of these symptoms develop in nephritis, active treatment must immediately be instituted. A diminished output of urine usually accompanies these symptoms, although this may not always be true in contracted kidney. The pulse may be slow, becoming rapid, as the severity of the symptoms increases, unless considerable cerebral pressure causes its retardation for a time. If the condition becomes serious, the pulse may become rapid and weak, and the blood pressure lower.

Examination of the blood usually reveals an increase of nonprotein nitrogen in nephritis as uremia develops, but it should be noted that this increase has also been found in cholera and typhus fever. Foster[113] found that uremia and death may occur when the nonprotein nitrogen of the blood is not increased.

The exudates in nephritis have been shown to contain the same amounts of nonprotein nitrogen as the blood; hence, when in uremic patients an increased amount of water is lost by the bowels, by the kidneys or by perspiration, these fluid exudates are apt to be absorbed, and serious uremic symptoms may again appear as a result of the increased nonprotein nitrogen and other toxins in the blood. When uremia and finally coma occur without convulsions the amount of retained nitrogen in the blood has probably not been greatly increased since the more retained toxins there are in the blood, the more probable is the occurrence of convulsions.

Foster found that ammonia-nitrogen may or may not be increased in uremia, but that it is usually increased in convulsive cases and in those cases with a high total nonprotein nitrogen. Normally there is less than 0.5 mg. of ammonia-nitrogen in 100 c.c. of blood. The greatest increase of ammonia-nitrogen in the blood is found in diabetics and in diabetic coma.

Folin[114] found that the uric acid of the blood is increased in renal disease, while Foster found that the purin nitrogen is increased in nephritis, most markedly in those who have contracted kidney; in uremia it is twice the normal amount.

Corroborative of the findings of Foster that occasionally uremia may occur without an increase in nonprotein nitrogen in the blood, Strauss[115] terms a condition "pseudo-uremia" in which the nitrogen retention is not great and the blood tension may not be high. These patients have a tendency toward convulsions and coma; the condition is closely allied to puerperal eclampsia. Convulsions, occurring when the kidneys are not apparently seriously insufficient and the nonprotein nitrogen of the blood is not increased, point toward acidosis, and future investigations may show that the ammonia-nitrogen of the blood is increased.

(To be continued)

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[111] Chace, A. F., and Myers, V. C.: The Value of Recent Laboratory Tests in the Diagnosis and Treatment of *Nephritis*, The Journal A. M. A., Sept. 23, 1916, p. 929.

[112] Morse, Arthur: Creatin and Creatinin Excretion During the Puerperium and Their Relation to the Involution of the Uterus, The Journal A. M. A., Nov. 6, 1915, p. 1613.

[113] Foster, N. B.: Uremia, Arch. Int. Med., March, 1915, p. 356.

[114] Folin: Jour. Biol. Chem., 1914, **17**, 489.

[115] Strauss: Berl. klin. Wchnschr., April 12, 1915.

Occupation Therapy.—Susan E. Tracy, R.N., of Jamaica Plain, Mass., is given credit for having emphasized the value of occupation for convalescents in aiding recovery, in adding to the sum of happiness of the shut-ins and perhaps in placing many in the way of earning a livelihood. In 1798 Dr. Benjamin Rush recommended occupation for the mental defectives in the Pennsylvania hospitals. Its value as applied to the convalescents in general hospitals has not been recognized. Only within recent years has any effort been made in the direction of providing such occupation. Miss Tracy has developed her ideas during a period of the last ten or fifteen years since her graduation as a nurse, delivering her first lectures to the senior class of nurses in the Massachusetts General Hospital in 1911. The Maryland *Psychiatric Quarterly*, January, 1917, is devoted to a sketch of Miss Tracy and her work, with an article by her detailing her experience in establishing occupational teaching among the convalescents and the nurses of the Michael Reese Hospital, Chicago, in which institution it has now become a definite part of the hospital routine and of the nurses' training course. As has been said by Miss Tracy, this is peculiarly nurses' work. Even beyond the remedial and alleviating values of this branch of nursing, there are almost limitless possibilities for education and for human salvage.

Special Article

THE MEDICAL OFFICER OF THE ARMY

III

ARMY REGULATIONS AND EQUIPMENT

The government of the army is outlined by revised statutes. These are laws passed from time to time by the Congress of the United States to suit the changes and progress in military affairs. Under these laws and as an interpretation of these laws, we have the army regulations. These regulations are fairly numerous and are printed in book form for distribution to the army at certain regular intervals. Naturally, changes are frequently occurring, and once every month is published a pamphlet containing the paragraphs which have been revised during the month printed in their revised condition.

Absolute slavish following of army regulations is not intended. In certain instances in which expenditures of money are provided for, the details are to be followed; but as a rule the spirit behind the regulation governs, and the wording is of only a general character. Laws governing the personal life of officers and men are embodied in the articles of war which represent the criminal code of the military service. These articles have recently been revised, and from a legal standpoint are considered effective and up to date. Court martial procedure is outlined in this law, and crimes and misdemeanors with their penalties are shown. The Supreme Court of the United States has decided that if the military authorities take cognizance of a criminal case first and take steps to prosecute the offender, this procedure takes precedence over the civil courts, and the case will be tried in the military courts and punishment effected as a court martial shall direct.

The regulations are carried out and laws are promulgated by means of orders. These are of two classes: one known as "special orders," which concern the individual officer or man, and the other known as "general orders," in which instruction of a general character necessary for the entire command is issued. Information of general interest to the army as a whole is issued in the form of a bulletin. The latter class includes the text of laws passed or the decisions of the judge-advocate-general and the auditor of the war department.

CUSTOMS OF THE SERVICE

In addition to the printed regulations as outlined, we have the customs of the service; these are of considerable importance. They are the unwritten law of the army, though not pertaining as a rule to very important subjects, still the life of the army is to a certain extent governed by these customs. They are numerous and cannot be outlined at this time, but an example can be given: When a visitor is present in the house of an officer or an enlisted man in an army garrison, the surgeon of the post treats that visitor when sick without charge under the same conditions which authorize him to treat the families of officers and men, though there are no written regulations covering the subject.

MILITARY DISCIPLINE

Military discipline is a subject which is poorly understood in civil life and may be defined as the state of mind which causes a soldier to respond immediately to the orders of his superior even in the face of great danger without once hesitating to think about the order. The lack of this state of mind is illustrated when untrained troops are placed in the line of battle, and though they may be individually brave they cannot stand before the onslaught of the enemy because they are not taught to obey implicitly the orders of their officers, and hesitate, weighing in their own minds the question as to whether they should stand or retreat. To obtain this state of mind, long training is necessary, and this training is carried out under what are considered by the average civilian as rather peculiar methods. In the first place, what would seem exaggerated respect to their superior officers is inculcated in all officers and men. The little forms of address which are usually classed as military in nature are constantly used, and respect is given promptly and without reserve, not so much to the wearer of the rank insignia but to that rank itself. Furthermore, drill in close order is indulged in for hours at a time, and from the knowledge learned during the present European war, every man knows that this drill would not be used on the battlefield. Why, therefore, should so many hours a day be given to something which is useless from that standpoint? It is carried out simply to accustom the men to obey quickly and implicitly the orders given them by their superiors without once stopping to question their advisability. All work of a military character must be directed by the leaders of a command, and the junior officers and enlisted men should obey at once orders given them, for the responsibility rests not on their shoulders but on the shoulders of those in higher command.

MILITARY HONORS

Military honors are important, not only from the standpoint of an exercise in courtesy and in respect due to the position held by the individual, but also to show respect to the flag and the country which it represents. At retreat when the flag is lowered and the "Star Spangled Banner" played, every officer and man within sight of the flag or in hearing of the music stands at attention, facing toward the flag, salutes at the first note of the anthem, and retains the position of salute until the last note of the anthem.

The hand salute is not only required from the enlisted men when they pass or address an officer, but is also required from officers when passing or addressing their superiors, and any salute given, whether by an enlisted man or an officer, must be returned promptly by the person saluted. The technic of the salute may be thus described: The right hand is raised smartly to the brim of the hat, thumb and fingers extended and joined forearm extended at an angle of 45 degrees, hand and wrist straight. The hand is held a moment in this position and then returned smartly to the side.

Salutes by cannon are also required in the military service, and in the regulations there is a list of all officers, civil and military, who are entitled to this salute. The largest number of guns given as a personal salute is twenty-one for the President of the United States. This salute is fired when the person entitled to it arrives at the camp or station. There are also certain official courtesies required of all officers. The one which a reserve officer will be most frequently called on to observe is the official visit to the commanding officer of the post, regiment or other organization to which this officer is temporarily or permanently connected. He reports his arrival to the adjutant and then proceeds immediately to the office of the commanding officer and makes his official call. This call is also required whenever a visit is made to a post, whether it is for official or for personal reasons. A call is also required to be paid at the house of the commanding officer.

CEREMONIES

The principal ceremonies which are held in a military command are parades and reviews. These are held not from the desire to make a show but from a strictly military reason. In holding such formations, the officers and men are encouraged to keep their clothing, arms and accouterments in perfect condition. This work is also assisted by inspections of the command, whether a company, battery or other military organization. These inspections, following army regulations, are held regularly every Saturday morning, and should be very thorough in character. The equipment of the men is carefully gone over and its condition verified in the minutest degree. By this means the commander is assured that his troops are well equipped for service at all times and that their equipment is kept in perfect condition. On the last day of each month, muster is held. This ceremony, which consists in the parading of the entire force and a calling of the roll in the presence of the organization commander, is an old one, and dates back from the beginning of our service. No man may be paid unless his name appears on the muster roll.

RANK AND INSIGNIA

Military rank is necessary in every military organization. To obtain the respect of the enlisted men in any army, the officers, whether line or staff, should have appropriate rank. This is not only necessary for the officer who commands the men in the line but also for any person above the grade of enlisted man who comes in intimate contact with the soldier. The dental surgeon or veterinarian has no men to command, but he comes in intimate contact with the men and, being given military rank, requires and receives the respect of the men.

The grades of officers in the service, whether in the staff or in the line are: second lieutenant, first lieutenant, captain, major, lieutenant-colonel, colonel, brigadier-general and major-general. The insignia of these ranks is as follows: the second lieutenant has no insignia on the shoulder of his service uniform, but all officers have around the cuff of the blouse a band of braid ½ inch wide. On the collar the officer also has the U. S. on both sides, followed by the insignia of the staff corps or branch of the line to which he belongs. The enlisted man, on the contrary, has on one side of the collar a round badge with the U. S. in raised letters on it, and on the other side the same badge with the corps insignia on it. The first lieutenant in addition to the insignia shown above has on each shoulder one silver bar; the captain, two silver bars, the major, a gold leaf; lieutenant-colonel, a silver leaf; colonel, a silver spread eagle; the brigadier-general, a silver star, and the major-general two silver stars. When the blouse is not worn, the insignia is placed on the shirt collar thus: on the right side the letters U. S. and the insignia of rank; on the left side the insignia of the corps or arm of the service.

The rank next to private with the enlisted men is corporal; next there is the sergeant and first sergeant of a company; the battalion sergeant-major is the ranking noncommissioned officer of the battalion. The regimental sergeant-major is the ranking noncommissioned officer of the regiment. In addition to this there are the chief musician, two color sergeants, a supply sergeant, and the hospital sergeant. The grades of noncommissioned officers in the staff corps are similar up to the rank of first sergeant. This rank in the staff is designated as a sergeant first-class. The higher grades of the staff corps are fairly numerous, and the highest grade is similar to that of the master hospital-sergeant of the Medical Department. The insignia to designate the noncommissioned officer is worn on the sleeve of his blouse or shirt, and consists of what are called chevrons. These chevrons are sewed on the blouse with the point upward, and with the staff corps the corps insignia is placed below the chevron; but with the line there is no designation of their branch of the service. The corporal has two chevrons; the sergeant three; the first-class sergeant three with a bar connecting the ends of the chevrons; this bar is an arc of a circle and does not go straight from one end to the other. The hospital-sergeant has two bars across below the chevron; the master hospital-sergeant has no chevron but a wreath surmounted by the corps insignia and a star.

The uniform required for all officers is: a woolen olive drab blouse and breeches (in summer, cotton olive drab is used, and several pairs of breeches of this cloth should be obtained so that they can be washed frequently); two olive drab flannel shirts; serviceable shoes, preferably the army pattern; leather puttees; campaign hat and cord; proper rank insignia, and a black necktie for the shirt.

FIELD EQUIPMENT

The field equipment of officers of the medical corps is as follows: the bedding roll, which is a piece of canvas of suitable size in which the bedding can be rolled for ease in transportation and protection from the weather. This roll is usually held together by a pair of straps. Two blankets: these blankets may be obtained from the quartermaster's department. A clothing roll can be obtained from the quartermaster's department. This is used to carry the clothing of the officer and any small articles which he may desire to have with him. It is of canvas provided with pockets and straps, and can be rolled up in a compact bundle and carried by a handle which is attached. If serving with troops, it is necessary to have a shelter tent, which is obtained from the quartermaster's department. Under these circumstances the first-aid packet and pouch, meat can, fork, knife and spoon, and water bottle are needed, and can be obtained from the ordnance department with the exception of the first named, which is furnished by the Medical Department. On joining a command each officer is provided with an identification tag attached to a tape, and it is required that this identification tag be worn all the time. Each officer should provide himself also with notebook and pencils and a serviceable watch.

A mounted officer below the grade of major is furnished with horse equipment by the government free of charge, and if necessary a horse is also provided for his use. If he should desire to buy a horse he is entitled to $150 additional pay per year. If he owns two horses he receives $200 additional pay per year. An officer of the grade of major or higher is required to furnish his own horse and horse equipment.

(To be continued)

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SATURDAY, MAY 5, 1917

* * *

THE TIME HAS ARRIVED FOR ACTION. PHYSICIANS, ESPECIALLY THE YOUNGER MEN, WHO HAVE BEEN DELIBERATING AS TO WHETHER OR NOT THEY SHOULD OFFER THEIR SERVICES TO THE GOVERNMENT SHOULD DECIDE NOW. STOP DELIBERATING AND ACT. NOT THAT THERE IS AN IMMEDIATE NEED FOR YOUR SERVICES, BUT THERE IS AN IMMEDIATE NEED THAT THE GOVERNMENT SHOULD KNOW ON WHOM IT CAN DEPEND SO FAR AS ITS MEDICAL OFFICERS ARE CONCERNED.

* * *

ACHIEVEMENTS OF THE MEDICAL CORPS OF THE UNITED STATES ARMY

In the May number of the *Scientific Monthly* Colonel C. C. McCulloch, librarian of the Surgeon General's Office, publishes an interesting and detailed record of the scientific and administrative work of the Army Medical Corps, which is all the more timely and opportune in that our military establishment is now in need of capable young physicians and surgeons, who, whether in the regular Medical Corps or the Reserve Corps, are ready to serve their country at the present hour. To the young man who is minded to take this step, such a record ought to be a stimulus to patriotism and an incentive to ambition, for in few branches of activity have more opportunities for achievement been offered and utilized than in the work of the Army Medical Corps. Here, the right man in the right place can always "do things."

From the times of the Iliad and the Anabasis, the army surgeon has always been a foremost figure in military affairs, not always recognized, it is true, but usually "winning out" in the end. Machaon and Podalirius, Paré and Wiseman, Larrey and Letterman are in every way as familiar names in medical literature as Achilles or Hector, Condé or Cromwell, Napoleon or Grant in epic or history. Pringle, whose name is associated with the establishment of the Red Cross idea at the battle of Dettingen, was not only the founder of modern military medicine, but also one of the most discerning physicians of his time. He was a pioneer of hospital ventilation, camp sanitation and antisepsis, showed the identity of jail (typhus) fever and hospital fever, brought the dysenteries into one category, and named influenza. John Hunter was surgeon general of the English army. Guthrie and Sir Charles Bell operated at Waterloo. Larrey and Letterman standardized rapid transportation of the wounded from the field. MacCormac and Victor Horsley were pioneers in vesical and neurologic surgery. The army surgeons of the Indian Medical Service shouldered a large part of the actual administration of Hindustan in the early days. They introduced and operated the telegraph lines, officered and ran the mint, acted as postmasters of the Indian stations, took the first census, improved the water supply, botanized and geologized over the whole peninsula, as portly volumes show, described the animals, poisonous snakes, minerals, costly woods and art products, wrote poems, translated Oriental texts, and added enormously to the science of tropical medicine. The names of Fayrer, Murchison, Russell, Waring, Ronald Ross, Leonard Rogers, Leishman, Donovan, and Vandyke Carter stand high in these annals.[1] Freyer improved the surgery of the prostate. Smith and Elliot have done much for the surgery of the eye. In the German army, the Langenbecks, von Graefe, Sr., Dieffenbach, Stromeyer, Helmholtz, Cohnheim, Loeffler, von Behring and Unna all had honorable records. In France, Laveran has written large treatises on military hygiene, and Tuffier at present manages the general surgery of the whole French line. Pirogoff, the great war surgeon of the Crimea, is the most eminent name in Russian medicine.

Colonel McCulloch's record goes back to colonial days, gives a full account of the work of the surgeons general, from Morgan to Gorgas, and enumerates the scientific work of the different medical officers in detail. The early names of Morgan, Rush, Shippen, Thacher and John Jones are well known. Morgan and Shippen were the principal founders of the medical department of the University of Pennsylvania (1765). William Brown, physician general of the Middle Department (1775-80), got up the first American pharmacopeia (1778). Of the early surgeons general, Tilton, Lovell (the patron of Beaumont) and Lawson were capable administrators. Hammond made his mark as physiologist and neurologist, founded the Army Medical Museum (at the instance of John H. Brinton), and during the Civil War created the special hospitals for cardiac, pulmonary and neural diseases, at which Da Costa first described irritable heart in soldiers, and Mitchell, Morehouse and Keen those gunshot disorders of nerves which Marie and his co-workers in Paris are now studying with such keen interest. Under Barnes, Crane, Murray and Moore, the medical and surgical history of the war was begun and completed by Otis, Woodward, Smart and Huntington. Under Barnes, John S. Billings made his famous reports on barracks and military hygiene, and began his remarkable career as hospital constructor, library administrator, statistician, sanitary engineer and medical bibliographer. The "Index Catalogue" and "Index Medicus," founded by Billings and Fletcher, are known everywhere. Surgeon General Sternberg was the earliest of the corps to take up bacteriology; he first isolated the bacillus of pneumonia, cleared the ground for the work of Walter Reed and his associates on the transmission of yellow fever, and founded the Army Medical School. O'Reilly created the Medical Reserve Corps. Torney, who managed the work of medical relief and sanitation at the San Francisco earthquake and fire, reorganized the dental and nurse corps of the army and instituted compulsory vaccination against typhoid fever. The work of Gorgas in eradicating yellow fever from the Isthmus and rendering Panama habitable is the outstanding achievement in public sanitation of our time.

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[1] Crawford, D. G.: A History of the Indian Medical Service, 1600-1913, London, 1914.

Among the individual medical officers, William Beaumont made an epoch by his work on gastric digestion, Letterman, by his work on ambulance evacuation of the wounded and general reorganization of the medical service in the field, Walter Reed by his demonstration of the transmission of yellow fever by the mosquito. Reed, Vaughan and Shakespeare showed how typhoid fever is transmitted in camps, and Major Russell eradicated the disease from the army by wholesale vaccination. Smallpox and leprosy were driven from Porto Rico by Colonel Hoff, and hookworm infection by Major Ashford. Captain Vedder diminished beriberi in the Philippines, and first showed that emetin is a specific in amebic dysentery. Major Craig demonstrated malaria carriers, also intracorpuscular conjugation as the cause of latent and relapsing malaria, and discovered *Paramoeba hominis*. Majors Ashburn and Craig discovered *Microfilaria philippinensis* and showed that the filterable virus of dengue is transmitted by the mosquito *Culex fatigans*. Captains Gentry and Ferenbaugh showed the transmission of Malta fever by goats in Texas. That wound infection may be conveyed by gunpowder or projectiles, in spite of the heat of the act of firing, was demonstrated by Colonel L. A. La Garde, whose treatise on gunshot wounds is now of especial importance. The Medical Corps of the Army has turned out a large number of admirable textbooks, such as those of Tripler, Woodhull and Straub on military medicine, Munson and Havard on military hygiene, Christie on Roentgen-ray diagnosis, and Munson on sanitary tactics. Colonel Munson, the present editor of the *Military Surgeon*, is the inventor of the Munson last, which has made the soldier's shoe absolutely comfortable for marching purposes. Outside the medical sciences, Coues, Merrill, Shufeldt and Mearns have distinguished themselves in ornithology, and Matthews and Woodruff in ethnology, and to the line of the army, the corps has contributed Generals Wood and Ainsworth. Altogether, a brilliant record, which, if surpassed by the work of the Indian Medical Service in versatility, is, as McCulloch says, unequaled anywhere in preventive medicine.

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YOUR COUNTRY NEEDS YOU; ARE YOU SO SITUATED THAT YOU CAN RENDER ASSISTANCE?

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PREPARATIONS OF THE PITUITARY GLAND

The importance of the standardization of preparations of the posterior, or infundibular, lobe of the pituitary gland (the liquor hypophysis of the new United States Pharmacopeia, pituitary solution, pituitary extract, etc.) is exemplified by a recent publication of Roth.[1] As is well known, the active constituent or constituents of this gland have not been isolated, and there is no chemical method of determining the activity and therapeutic value of various preparations. There are, however, certain physiologic methods by which the activity of such preparations may be determined with a considerable degree of exactness. The last revision of the Pharmacopeia, recognizing that the best attested field of usefulness for such preparations is in obstetrics, adopted as a test their activity on the uterus of the guinea-pig; the details of the method adopted by the Pharmacopeia are those described by Roth.[2] Roth now reports on the activity of seven samples of commercial infundibular extracts, the products of five American manufacturing pharmacists. Four of these samples were found to be of Pharmacopeia strength; the other three were much weaker. Of the latter, one had but one tenth, another but one fifth and the third but one fourth of the required activity. Those preparations which had been accepted by the Council on Pharmacy and Chemistry for inclusion in New and Nonofficial Remedies corresponded to the Pharmacopeia requirements. Roth also compared the activity of these seven preparations on the blood pressure, another method by which it has been proposed to standardize infundibular extracts. The four preparations which were equally active on the uterus were found to be equally active on the blood pressure; the other three were much weaker. Roth points out, however, that the results of the two methods are not necessarily parallel; in one instance, for example, two samples caused equal rises of blood pressure, but one was twice as active as the other on the uterus. Hence it is evident that the blood pressure test is not a satisfactory method for determining the activity of a preparation on the uterus, and vice versa.

The subject of pituitary standardization, or perhaps it may be said the application of the present method is, however, in need of further study. Thus the statement has recently been made[3] that commercial preparations are on the market which have from three to five times the activity of the Pharmacopeia standard; this was not the case, however, with the preparations examined by Roth. It is probable that some have used for comparison a weaker standard than that proposed by the Pharmacopeia; this, of course, would lead to the conclusion that the commercial preparations were stronger than the Pharmacopeia standard. Roth suggests that the employment of standards of unequal activity by the various supply houses could easily be eliminated by having a central laboratory distribute material for use as a standard. It will be recalled that before the United States Public Health Service established and began the distribution of standards for diphtheria and tetanus antitoxins, the commercial preparations of these varied even more in activity than do those of the pituitary extracts at present.

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[1] Roth, G. B.: Pituitary Standardization, Bull 109, Hyg. Lab., U. S. P. H. S., 1917.

[2] Roth, G. B.: Bull. 100, Hyg. Lab., U. S. P. H. S.

It is unnecessary to emphasize the importance of this subject; this is sufficiently evident to those who have followed the recent clinical literature on the use of pituitary extracts in obstetrics. These preparations are used in times of emergency; a weak preparation is valueless, whereas overdosage, either from too strong a preparation or from too free use of a preparation of the official strength, is often followed by disaster to the mother or child or both. Roth cites a number of cases of ruptured uterus and other injuries resulting from their use.

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ARE YOU PHYSICALLY AND MENTALLY QUALIFIED TO ACT AS A MEDICAL OFFICER IN THE ARMY?

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NEPHRITIS, BLOOD PHOSPHATES AND ACIDOSIS

There is no longer much doubt that in the more severe types of chronic renal disease mild grades of acidosis frequently occur. This manifests itself in a lowered alveolar carbon dioxid tension, decreased affinity of hemoglobin for oxygen, reduced alkalinity of the blood, increased intensity of urinary acidity, and retention of alkali by the body in cases in which the kidney is capable of the rapid elimination of excess of alkali.[4] It is well known that the acidosis itself can be overcome by the administration of alkalies. This does not, however, aim at the underlying causes of the excess of acid in the body. Even in normal metabolism there is a continual production of acid substances. These combine with base in the blood and are transported to the lungs and kidneys for excretion. Carbon dioxid is eliminated by the lungs. It devolves mainly on the kidneys to excrete sulphuric acid, phosphoric acid, and those products of deranged metabolism, aceto-acetic acid, beta-oxybutyric acid, etc., which are most commonly thought of as sources of the acidosis of disease.

There are many reasons for believing, however, that acidosis is by no means always identical with what has been termed ketosis or ketogenesis. Marriott and Howland[5] have recently demonstrated that an accumulation of acid phosphates may occur in the blood when the kidney functions are upset. The significance of this will be appreciated when it is recalled that the regulation of the acid-base equilibrium of the body is largely brought about by the ability of the kidney to excrete acid phosphate. This regulation of reaction is one of the most important of the kidney's functions. If this function is interfered with, the normal acid-base equilibrium must be disturbed, and eventually acidosis is inevitable.

According to Marriott and Howland, the retention of acid phosphate (for approximately 90 per cent. of the phosphate in an average urine is acid phosphate) would seem to be sufficient to account for the degree of acidosis observed. It does not follow that this is the sole factor in the acidosis of nephritis, particularly in the terminal stages. The retention of acid phosphate in nephritis is not part of a general salt retention; it seems due to a certain specificity of retention, for it has been found that the inorganic phosphates were much increased when there was no increase of sodium chlorid. It is also not necessarily proportional to the total nitrogen and urea retention. The phosphate retention is not a result of acidosis per se, for Marriott and Howland have failed to find an accumulation of phosphates in the serum in severe cases of acidosis in diabetes and other forms of acetone body acidosis. That the high phosphate content is due to interference with a specific function of the kidney and not to increased phosphate production in the body or increased absorption from the intestinal tract is shown by the fact that the urinary output of phosphate is not increased and, indeed, may be diminished. It is possible to determine a constant for phosphate excretion analogous to Ambard's constant for urea.

Administration of alkali generally fails to bring about any noteworthy reduction of the accumulated phosphate in the blood plasma. Herein lies a warning against the indiscriminate administration of bicarbonates in kidney disease. The warning to use alkalies rationally is timely in these days when nephritis and alkali therapy are blindly linked together without restriction by many clinicians. The accumulated phosphates of the serum, even though neutralized, are capable of doing serious harm to the organism. The amount is sufficient to have a definite influence on the osmotic pressure. This suggests a possible connection with the phenomena of edema and hydremia.

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[3] Pittenger, P. S., and Vanderkleed, C. E.: Jour. Am. Pharm. Assn., 1917, 6, 131.

[4] Palmer, W. W., and Henderson, L. J.: A Study of the Several Factors of Acid Excretion in Nephritis, Arch. Int. Med., July, 1915, p. 109.

[5] Marriott, W. McK., and Howland, J.: Phosphate Retention as a Factor in the Production of Acidosis in Nephritis, Arch. Int. Med., November, 1916, p. 708.

In calling attention to the fact, known to physiologists, that administration of calcium, which is eliminated by the bowel chiefly, leads to an associated output of phosphate through the intestine, Marriott and Howland have offered a suggestion for possible therapeutic procedure. A new point of view in respect to the untoward features of acidosis, retention and other related phenomena has been presented.

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ARE YOUR PRACTICE AND SOCIAL RELATIONS SUCH THAT YOU CAN SUSPEND THEM FOR A FEW MONTHS OR FOR A YEAR, IF NEEDED?

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THE ESTIMATION OF ACIDOSIS UNDER CLINICAL CONDITIONS

Despite the somewhat indefinite significance attached in the past to the term "acidosis," what this word actually represents is rapidly being determined, thanks to the unusual attention given to problems in relation to it. A recent writer[1] has described acidosis as including conditions in which there is a general impoverishment of the body in bases or substances which readily give rise to bases. This may be due to faulty absorption of bases, to an unusual loss of bases from the body, or to their neutralization by abnormal amounts of acids. Increase in the amounts of acids in the body may be due to the production of abnormal acids, an overproduction of the usual body acids, or, as Howland and Marriott have recently suggested, to an accumulation of normal acids because of failure in excretion.

The attempts to obtain evidence of one or more of these forms of acidosis have been varied. Owing to the fact that the carbon dioxid of the blood decreases in amount as acids other than carbonic acid increase therein, indications of acidosis have been sought by determining the carbon dioxid content of the circulating medium. The estimation of the carbon dioxid in alveolar air furnishes such statistics. Studies of the output of acid in the urine have been made for the same purpose. The body as a whole has been titrated, so to speak, by ascertaining the amount of alkali necessary, when administered by mouth or otherwise, to render the urine alkaline. Ordinarily in this way it takes from 5 to 15 grams of sodium bicarbonate to change the reaction of the urine of a healthy person from acid to alkaline. When acid production is overabundant, much more alkali may be required. It may happen, however, that part of the neutralization of excessive amounts of acid in the organism is taken care of by the ammonia mechanism; hence an increased output of ammonia is also looked on as indicative of excessive production of acid. The ketone substances are also not without significance.

Some of these various signs of acidosis may be obtained in numerous diseases. In each case, however, as Frothingham has pointed out, not all tests may be positive.[2] For example, acetone may be found in diabetes and in diseases in children, while in chronic nephritis it is not present; yet all of these conditions may show the alveolar carbon dioxid lowered or the sodium bicarbonate tolerance increased. It would seem, therefore, that so-called acidosis is not due in each case to the same abnormal factors. Frothingham, accordingly, has studied several of these tests for acidosis in the same case at the same time, to find out how the patients in whom an acidosis is supposed to exist react to the different tests. So far as possible, patients were selected who presented an uncomplicated picture of a single disease. In each case the carbon dioxid tension in the alveolar air was determined, the soda tolerance test was carried out, and the twenty-four hour specimen of urine was examined for the presence of acetone, for its hydrogen ion concentration, for the total nitrogen and for the ammonia nitrogen.

In reviewing the outcome of his experiments, Frothingham feels convinced that the hydrogen ion concentration in the urine is not reliable as an index of acidosis. Evidence of acidosis appeared at times in certain diseases, while in others no evidence of it was found. Those diseases, he states, which showed an acidosis at times by some of these tests are diabetes, chronic nephritis, pneumonia, acute articular rheumatism and several acute febrile conditions in a miscellaneous group. Cases of exophthalmic goiter, epilepsy, syphilis, chronic cardiac disease, subacute nephritis, lung abscess, and many in the miscellaneous group distinctly did not show any evidence of acidosis by these tests. The results in the cases of primary anemia, gastric cancer, Addison's disease and cirrhosis of the liver were not so clearly defined, and in some of the tests suggested a slight acidosis. Furthermore, he believes that the acidosis found in diabetes is due to different causes, in part at least, from those which produce it in other conditions. It also seems likely that the acidosis encountered in different diseases is due to various causes, since the comparative response to these tests varies somewhat in the different conditions.

Studies like these enable the clinician to gain a critical insight into the relative values of some of the methods now in use for ascertaining the existence of acidosis. Of these tests, says Frothingham, either the estimation of the carbon dioxid tension in the alveolar air or the soda tolerance test showed variation from the normal in all the cases of acidosis. They also seem to be of value in detecting the degree of acidosis.

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[1] Sellards, A. W.: Bull. Johns Hopkins Hosp., 1914, 25, 101.

[2] Frothingham, Channing, Jr.: Acidosis in Acute and Chronic Disease, Arch. Int. Med., December, 1916, p. 717.

Terminal Illnesses.—The terminal illness is not usually the one which has been the deciding factor in determining the individual's length of life. It is frequently but the last inimical process to attack a weakened human organism, an organism exhausted and with diminished resistance as a result of previous diseases and morbid processes.—J. W. Trask, *Public Health Reports*, Dec. 22, 1916.

Current Comment

THE SCIENTIFIC PROGRAM AT NEW YORK

We publish in this issue the program of the fifteen scientific sections which form the Scientific Assembly. A glance through these programs will show that they present to the various sections a remarkable number and variety of scientific topics covering the whole field of modern medicine and reflecting the progress being made in medicine. The symposium on poliomyelitis ought to be of very practical and timely interest. Another subject that is also timely and important and should attract a large audience is the discussion in the Section on Preventive Medicine and Public Health of the service required of the medical officers of the army and navy. As will be noticed, papers on military medicine and surgery also appear in other sections. Incidentally, it is to be regretted that all of this material could not have been presented at one time and place. The local committee on arrangements has provided for the demonstration of a field hospital unit in which the practical equipment of such a unit will be available for inspection and study. The details of the arrangements of the opening meeting and for the social entertainment are not available for publication in this issue, but will appear shortly. However, we can assure those Fellows who are planning to attend the New York session that they will not be disappointed. Not only will they be furnished a scientific program that will satisfy their professional taste, but they may also depend on having a good time socially.

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HAVE YOU MADE APPLICATION FOR APPOINTMENT TO THE MEDICAL CORPS OR MEDICAL OFFICERS RESERVE CORPS OF THE ARMY?

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"PREPAREDNESS" AND THE EXAMINATION OF RECRUITS

During the early months of their active service, the most important work for medical officers, both as to the amount and the responsibility assumed, will be the examination of recruits. The first call will be for 500,000 men, in addition to the number necessary to bring the regular army up to the quota provided in the law of June 3, 1916. This still requires approximately 160,000. The examination of 660,000 men is a pretty large undertaking, especially if the examination is made as thoroughly and as carefully as it should be made. The aftermath of the Spanish-American War, with its disabilities already requiring pensions far beyond reason, should be a sufficient warning to our government not to follow the lax methods regarding the enlistment of men which prevailed in 1898. France and England have had a sorry experience, and both have learned at tremendous cost the folly of regarding quantity as of more importance than quality. However, no matter whether the examination shall be rigid and inclusive—to include, for instance, the Wassermann test—or more or less superficial, the fact is that the medical officers, especially the Reserve Corps, have a tremendous and responsible task before them. Undoubtedly many who will be assigned to the examination of recruits have become rusty in diagnostic methods and will need to review some lessons in physical diagnosis. The physical examination of recruits is practically the same as that for life insurance, except that it is on a larger scale, and in some respects is, or should be, more exacting. All who have now offered themselves, or who are proposing to offer themselves, for the Medical Officers Reserve Corps should adopt the principle of "preparedness" and be ready when called. The War Department has a manual entitled "Rules for the Examination of Recruits" (General Orders No. 66), which contains valuable information. This is supplemented by U. S. Army Recruiting Circular No. 1. These pamphlets can be obtained by addressing the Army Medical Department—or THE JOURNAL will gladly send a copy on receipt of a stamped, directed envelope.

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YOU WILL FIND APPLICATION BLANKS IN THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION OF TWO WEEKS AGO, APRIL 21.

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EFFECT OF GASTRIC JUICE ON THE JEJUNAL MUCOSA

The consideration of ulcers of the upper digestive tract as manifestations, in part at least, of the elective invasion of the tissues by certain types of streptococci has directed attention away from some of the older assertions in respect to the etiology of this condition. Mechanical factors, for the time being at least, have lost much of their interest in connection with the origin of gastric and duodenal ulcers. The possibility of a corrosive action of the gastric juice on a necrotic or otherwise damaged mucosa cannot be overlooked, however, particularly in view of the fact that somewhat effective therapy seems to have been found in the constant administration of alkalies, which are supposed to effect their cure by neutralizing the acid gastric juice.[1] Whether the chronicity of certain types of ulcer is due entirely to bacterial infection, as is lately contended, or to the combined effects of streptococci and the corrosive action of the gastric juice may still be debatable. Hardt[2] has maintained that there is no "hyperacidity" in the gastric juice following the experimental production of gastric ulcers; and when gastric or duodenal ulcers exist there may or may not be a continuous hypersecretion. At the Mayo Clinic, Mann[3] has implanted functionally resected portions of the jejunum with intact blood supply into the posterior wall of the stomach in the region of the antrum of the pylorus. The continuity of the intestine was maintained by anastomosis. It was thought possible, by concentrating the effect in the stomach, to determine the part, if any, played by the gastric juice in the production of gastrojejunal ulcers. In such an experiment the portion of the jejunum, which is usually next to the stoma in a gastrojejunostomy, was placed in the part of the stomach which is almost always bathed with free acid. Furthermore, the condition of the transposed jejunal mucosa differed from that of the mucosa near the stoma of a gastrojejunostomy in that the former was not protected by the other intestinal secretions. Because of this, Mann points out, the effect of the acid on the transposed jejunum should be decidedly augmented. Although, in some cases, there was a slight thickening of the transplanted mucosa and muscularis and an increase in the number and size of the mucus-producing cells, this effect was not uniformly observed. Sometimes no change was noticed, the jejunal mucosa remaining anatomically normal. Its physiologic functional power was also unimpaired. Fat was apparently absorbed with readiness by the transplant in the stomach, in harmony with what occurs through the same membrane in its usual location in the intestine and in contrast with the failure to take up fats which Mendel and Baumann[4] have described for the true gastric mucosa.

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[1] Compare Sippy, B. W.: Gastric and Duodenal Ulcer, THE JOURNAL A. M. A., May 15, 1915, p. 1625.

[2] Hardt, L. L. J.: Contributions to the Physiology of the Stomach, XXXIII, The Secretion of Gastric Juice in Cases of Gastric and Duodenal Ulcers, Am. Jour. Physiol., 1916, 40, 314.

[3] Mann, F. C.: The Effect on the Jejunal Mucosa of Exposure to the Gastric Juice, Jour. Med. Research, 1917, 35, 289.

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OTHERS ARE MAKING THE NECESSARY SACRIFICES. WHY NOT YOU?

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THE NEW YORK SESSION OF THE AMERICAN MEDICAL ASSOCIATION

In May, 1846, in response to a call issued by the Medical Society of the State of New York, there was held in New York City a conference for the purpose of discussing questions relating to the standardization of medical education in the United States. This conference adjourned to meet a year later in Philadelphia, where it resolved itself into a permanent organization —the American Medical Association. On three different occasions since then New York has been the place of meeting: in 1853, 1864, and 1880. Now again an annual session—the sixty-eighth—is to be held in the city which may be considered the birthplace of the Association.

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DO NOT DELAY. ACT NOW. TIME IS PRECIOUS. YOUR COUNTRY NEEDS YOU.

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THE SHORTAGE OF SALVARSAN

Simultaneously there come to The Journal two communications: The first is a telegram from Idaho, "Can you send me ampule neosalvarsan, salvarsan or arsenobenzol? Cannot get it in the West. Answer, collect." The second, a letter from a Chicago address: "I have 90 vials of neosalvarsan which I brought from Europe. It is in powder form in three different sizes of vials. There are 38 vials of 0.6 gram, 26 vials of 0.75 gram, 26 vials of 0.9 gram. I want eleven hundred dollars for them. Mrs. —." These communications tell their own story. Until Congress shall abrogate the patent on these drugs, physicians will be handicapped in fighting one of the most serious diseases, and the public and the army will suffer. And all for the commercial advantage of one concern.[5]

Medical Mobilization and the War

No Change in Medical Teaching

We announced last week (p. 1267) that the deans of forty-six medical schools of the United States had been asked to hold a meeting in Washington to consider the recommendations of the Committee on Medical Schools of the Advisory Commission of the Council of National Defense. As a result of this conference it was decided that it would be inexpedient to alter established courses of instruction with a view to expediting graduation. The maintenance of existing standards of medical education was looked on as being better calculated to insure a regular and adequate supply of competent physicians, no matter how long the war may last, than would any modification of prevailing methods. It was agreed to reorganize the teaching forces so far as may be practicable in order to release from the faculties of the medical schools as many men as can be spared for military duty.

Conference of State Health Officers with the United States Public Health Service

At the annual conference of state and territorial health officers with the United States Public Health Service held in Washington, D. C., May 1, the possible war activities of state and territorial health authorities were given special consideration. It was pointed out that these agencies might assist the federal authorities in the sanitation of military and naval camp sites, and in the hygienic control of camps. The police power of the various jurisdictions might be brought to bear directly on the environments of camps, thus establishing a subsidiary control to that of the military authorities. Furthermore, the various state laboratories can be made available for the diagnosis and sanitary surveillance of infectious diseases among troops. Special precautions will be taken to prevent the introduction of such infectious diseases as tuberculosis and the venereal diseases in connection with which the civilian population bears such a close relationship to the military establishments. By promptly reporting to the United States Public Health Service epidemics of the various infectious diseases developing in any state or territory, the civilian health authorities will make such information available to the army and navy. This information will enable the military medical officers to take the precautions which the exigencies of military service permit, toward safeguarding the health of the troops. Such notification of infectious diseases was particularly urged with respect to poliomyelitis, epidemic cerebrospinal meningitis, smallpox, typhus, typhoid fever, paratyphoid fever and bacillary dysentery.

It was suggested that the general sanitary supervision of soldiers suffering from pulmonary tuberculosis and of persons found by recruiting officers to be unfit for army or naval service because of suffering from this disease might be taken over by the state health authorities. Local hospitals for patients suffering from communicable diseases might also be made available for the care of cases occurring among troops or in any branch of the naval service.

Among other duties which health officers may be called on to perform are the sanitary supervision and control of interstate transportation facilities likely to be used for military purposes and of the sources of water, milk and food supplies of the combatant forces. Another duty would be the sanitary control of refugees and interned aliens held in special camps.

The conference also requested the surgeon-general of the Public Health Service to advise the executive health officials of the various states as to the lines of activity in which the federal service will be able, in case of necessity, to aid state and federal health services during the war.

State Health Facilities to Be Offered to the Federal Government

At an unofficial conference of state and federal health officers held independently of the annual official conference of these officers with the Public Health Service, it was resolved that in view of the conditions incident to a state of war the public health personnel, resources and organizations of the various states and territories should be placed at the disposal of the federal government; that under these conditions, the correlation, supervision and direction of the various state and territorial and local health agencies should be turned over to the United States Public Health Service; and that aside from hygienic and medical care of the actual military and naval forces, all sanitary and hygienic activities that required a national policy should be correlated, supervised and directed by the United States Public Health Service.

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[4] Mendel, L. B., and Baumann, E. J.: The Question of Fat Absorption from the Mammalian Stomach, Jour. Biol. Chem., 1915, 22, 165.

[5] It is reported that a bill to suspend the patent on salvarsan was introduced into Congress by Hon. H. W. Watson of Pennsylvania, and that hearings will be held on the bill this week.

A resolution was adopted describing the present personnel and organization of the United States Public Health Service as entirely inadequate and recommending the establishment of a national reserve corps to supplement it. The proposed sanitary reserve corps would be made up of sanitarians and past assistant sanitarians each commissioned by the president for a period of five years.

Additional Examining Boards for M. O. R. C.

In addition to the boards mentioned in The Journal, last week, page 1267, boards for the appointment of officers in the Medical Officers Reserve Corps have recently been appointed at the following places:

Ft. Huachuca, Ariz., Major Charles E. Marrow, Med. Corps.
Ft. McPherson, Ga., Lieut. Col. Thos. S. Bratton.
Ft. Screven, Ga., Lieut. Harry Rubin, M. R. C.
New Haven, Conn., Lieut. John W. Churchman, M. R. C.
Los Angeles, Major William L. Kneedler, U. S. A., Ret.
San Juan, P. R., Col. Basil H. Dutcher, Med. Corps.
Birmingham, Ala., Dr. John M. Lowrey, 727 1st Nat'l Bank Bldg.
Lincoln, Neb., Lieut. L. B. Sturdevant, M. R. C., 757 Holdredge St.
Springfield, Mo., Dr. Joseph W. Love.
Naco, Ariz., The Surgeon, U. S. Troops.
Mobile, Ala., Capt. John O. Rush, M. R. C., 412 Van Antwerp Bldg.
Baton Rouge, La., Capt. Charles McVea, M. R. C.
Memphis, Tenn., Major Frank D. Smythe, M. R. C., 554 East St.
Bowling Green, Ky., Major Arthur T. McCormick, M. R. C.
Nashville, Tenn., Major Lucius E. Burch, Eve Bldg.
Ft. Caswell, N. C., Lieut. Walter A. Newman, M. R. C.
Aberdeen, S. D., Lieut. William E. Clark, 519 7th Ave., S. E.
Columbia, S. C., Lieut. Francis A. Coward, M. R. C., State Bd. of Health Lab.
Kansas City, Mo., Dr. John F. Binnie, Rialto Building.
Ft. Riley, Kan., The Surgeon.
Austin, Texas, Capt. Albert F. Beverly, M. R. C., 311 W. 13th St.
Springfield, Ill., Lieut. George N. Kreider, M. R. C., 522 Capitol Avenue.
Sheboygan, Wis., Major Edward J. Barrett, M. O. R. C.
Mt. Vernon, Ill., Capt. W. H. Gilmore, M. O. R. C.

These examining boards are now authorized to conduct examinations for the Medical Officers Reserve Corps without reference to the surgeon-general's office, until the papers are completed.

Age Limit for Medical Corps Officers

There seems to be a misunderstanding in regard to the age limit for admission to the regular Medical Corps of the Army. Until Jan. 1, 1918, any one who meets the requirements—hospital service, etc.—can receive his commission in the Medical Corps prior to reaching his thirty-fourth birthday. After that date the law fixes the maximum age at 32 years. Those taking the examination now may enter the Army Medical School in July and complete the course in October, at which time they will be commissioned.

Medical Reserve Officers to Serve on the Western Front.—The Military Relief Department of the American National Red Cross is preparing to send 112 physicians from the Medical Officers' Reserve Corps of the United States Army for service with the British troops on the western front.

Reserve Corps Organized at Detroit.—At a meeting held in Detroit, April 4, the Detroit section of the Medical Reserve Corps, United States Army, was organized. Dr. James W. Inches, formerly of St. Clair, now health officer of Detroit, was elected president, Dr. Louis J. Hirschman, vice president, and Dr. Alpheus F. Jennings, secretary.

New Marine Hospital.—Dr. James A. Nydegger, Baltimore, of the United States Public Health Service has announced that the hospital on Remington Avenue, Baltimore, would be equipped immediately and put in readiness for the reception of sick and wounded soldiers and sailors. Provision will be made for the reception of 200. When the Quarantine Station is taken over, the government will have three marine hospitals in Baltimore.

Auxiliary Medical Corps Organized.—The Richmond Borough, New York, Unit of the Auxiliary Medical Corps, has elected Dr. Alfred H. Thomas, New Brighton, captain, and Drs. Charles L. Allers, New York, George E. Pearson, St. George, and John D. Lucey, Stapleton, lieutenants.——Dr. Daniel S. MacArthur, LaCrosse, Wis., has organized an auxiliary medical corps to be known as the LaCrosse Medical Reserve Corps.

Orthopedic Surgeons Aid in England.—Twenty orthopedic surgeons are being secured for service in England under Col. Robert Jones. This expedition will be under the direction of the Military Relief Department of the American National Red Cross. Col. Robert Jones is perhaps the best known orthopedic surgeon in England. Among other positions which he holds, he is lecturer on orthopedic surgery at Liverpool University, president and treasurer of the Liverpool Medical Institute, member of the Council of the Royal Society of Medicine and twice president of the Section of Orthopedics in the International Medical Congresses. The American orthopedic surgeons will go from the United States under the leadership of Dr. Joel E. Goldthwait of Boston.

Medical Men to Mobilize.—The first organized effort to mobilize the medical men of Maryland was made at the opening session of the annual meeting of the Medical and Chirurgical Faculty. Maryland has been asked to furnish 400 physicians for the Officers Reserve Corps. So far it has furnished but seventy-nine. Dr. Charles W. Mitchell, Baltimore, the principal speaker of the opening session, spoke on "The Physician's Duty in the Present Crisis." Osler Hall was turned into a recruiting station where information and application blanks could be obtained. Examinations for appointment as officers in the army or navy medical reserve will be held during the coming week, and will be conducted by a board composed of Maryland members of the reserve corps. Dr. John Staige Davis is chairman.

Columbia Unit War Hospital.—Within the brief space of a few weeks since the announcement that Columbia University was planning for an emergency mobile unit war hospital, funds have been subscribed, plans drawn, contracts let, and every preparation made for starting construction. Dr. J. Bentley Squier initiated the idea of this project, and its working out has been actively participated in by Dr. Adrian V. S. Lambert, Professor of Surgery of Columbia University. Dr. Alexander Lambert has received subscriptions amounting to $175,000, sufficient for the erection of the initial mobile unit. About $45,000 has been contributed by Mrs. E. H. Harriman for its equipment, some of which has already been purchased. It is planned to have a second identical unit organized immediately so that the hospital may be in continuous operation, and work continued without interruption.

New Members of the General Medical Board.—Since the publication of the composition of the General Medical Board, The Journal, April 14, page 1128, the following additional members have been appointed: Dr. John M. T. Finney, Professor of Clinical Surgery, Johns Hopkins University, Baltimore; Dr. Edward P. Davis, Professor of Obstetrics, Jefferson Medical College, Philadelphia; Dr. W. C. Woodward, Health Officer of the District of Columbia, Washington, D. C.; Dr. Simon Flexner, Director, Rockefeller Institute, New York; Dr. Theodore Janeway, Professor of Medicine, Johns Hopkins University, Baltimore; Dr. Hermann M. Biggs, State Commissioner of Health, New York; Dr. George Brewer, Professor of Surgery, University of New York, New York; Dr. George Walker, Johns Hopkins University, Baltimore; Dr. W. H. G. Logan, President-Elect, National Dental Association, Chicago; Dr. Sterling Ruffin, Washington, D. C.

Base Hospitals Ordered Into Active Duty.—Six of the base hospitals organized by the American National Red Cross for service with the Medical Department of the United States Army have been ordered abroad for active duty, probably in France. On arrival abroad they will be assigned to active duty, taking charge of hospitals in operation, as described in The Journal, March 31. The medical staff contains one medical director, two administrative officers, one quartermaster, one adjutant, nine surgeons and seven medical men.

The hospitals ordered into active duty are: base hospital No. 2, the Presbyterian Hospital, New York, Dr. George E. Brewer, director; base hospital No. 4, the Lakeside Hospital, Cleveland, Dr. George W. Crile, director; base hospital No. 5, Harvard University, the Peter Bent Brigham Hospital, Dr. Harvey Cushing, director; base hospital No. 10, the Pennsylvania Hospital, Philadelphia, Dr. Richard H. Harte, director; base hospital No. 12, Northwestern University Medical School, Dr. Frederick A. Beasley, director; base hospital No. 21, Washington University Medical School, St. Louis, Dr. Frederick T. Murphy, director. The administrative personnel of the base hospitals will be supplemented by two medical officers of the regular army corps, one sent as commanding officer and the other as adjutant. In addition, one line officer of the regular army will serve as quartermaster. The base hospitals are ordered into active duty to assemble at Fort Porter, Buffalo, for organization and training. It is reported that they will leave for France in from three to four weeks.

Lord Northcliffe on the Medical Corps of the Army.—Lord Northcliffe is widely known as an astute journalist with a view of science, of law, of every field of human endeavor as broad as that of many specialists in those fields. In a recent consideration of the lessons which the United States may learn from French and British mistakes, Lord Northcliffe comments on the work of the medical department of the army. In considering the question of sending a contingent of American troops to France he says:

> First and above all, there is the health of the contingent. How many lives did we lose at the outset by inclusion in our units of men medically unfit?
>
> Before the war the German physical examination of each would-be soldier occupied the time of two or three skilled medical advisers for from forty-five to sixty minutes. Our own medical examinations at the outset were too often a farce. Medical examination of men for the work of warfare is beset by so many pitfalls that without special training it cannot be undertaken by ordinary civilian doctors. Luckily for you, you have as one head of your army that great soldier, General Leonard Wood, who himself understands medical matters.

It is Lord Northcliffe's belief that too much emphasis cannot be laid on the work of the medical department. The English medical department, he believes, was sufficiently qualified for its work.

> The war has taught us that just as important as airwork, artillery work, the work of rifle and bomb, is the equipment of the medical services. In that matter you cannot do better than to follow our example . . . By a fortunate miracle, our Royal Army Medical Corps had, before the war, a staff of men of ability and vision, men who actually saw the size of the operations in the next war. I do not believe it would be possible to better our equipment. There are quite a number of American medical observers who can tell you all about it. Americans who have been both on the German and on the English side have reported that there was no comparison between the two, even so late as the battle of the Somme, when the war was more than two years old. The German medical force broke down entirely and was unable to meet the terrific rush of casualties. I have had that statement directly, not only on the authority of American eyewitnesses but also from other neutral observers.

Military Surgeons' Practice to Be Protected.—At the April meeting of the Marion County Medical Society a resolution was adopted providing that

> Every physician who is called to the colors will receive from his colleagues who do his practice at home one third of all the gross collections, to be paid the physician or his family monthly, as long as he holds a commission under that of major, and no longer. When he returns, irrespective of his rank, his practice shall be returned to him intact.
>
> Any patient consulting a physician who is not one of that doctor's regular patients, is to be asked to state if one of the physicians in the service of the government is his regular physician, making it clear to the patient why he is asked this question.
>
> Every physician entering the government medical service is expected, or should make an effort to procure from his patients signed statements to the effect that they are his patients. These signed statements to be filed with the secretary of the society, and the secretary shall furnish copies of these names to his local colleagues

The New York City Committee of American Physicians, at its meeting in New York, April 13, decided to form an auxiliary in each of the five boroughs of New York, to cooperate with the adjutant-general of the state, in ascertaining the medical and surgical resources, and to sanction any financial and personal agreements entered into by physicians to protect the practice of those who enter the Army service. The excutive council of the committee elected consists of Dr Karl A Connell, Col. William S. Terriberry, M C. N G., N Y, and Drs. George D. Stewart and Charles H Peck——At a meeting of the Richmond County Medical Society, April 13, resolutions were adopted providing that the practice of physicians who enter the military service will be cared for by those who remain at home, that faithful records will be kept, and that no charges will be made for such services——Plans have been made whereby the practice of physicians of Spokane who enter the military service will be conserved under the auspices of the Spokane County Medical Society. It is proposed that physicians in the military service receive compensation equal to their former earnings——The Racine Physicians Association, at its meeting, April 17, adopted a resolution providing that physicians who remain at home in the present war crisis shall share the burden of those who are in the military service and that one third of the receipts of practice among patients of such military surgeons shall be paid to the secretary of the county society and held in trust by him for the physicians or turned over, on his order, to the physician's family.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

New State Hospital.—The Arkansas legislature recently passed a bill providing for the sale of certain lands, by which a sum estimated at $150,000 will be provided to erect a new state hospital in Little Rock. This is to be the teaching hospital of the University of Arkansas Medical Department and under the control of the board of trustees of the university.

District Society Election.—At the semiannual meeting of the Tenth Councilor District Medical Society held in Fort Smith, March 20, Dr. Samuel D. Kirkland, Van Buren, was elected president; Dr. John M. Taylor, Fort Smith, vice president, and Dr. Arthur F. Hoge, Fort Smith, secretary. Fort Smith was also selected as the place for the September meeting.

ILLINOIS

Chicago

Personal.—Dr. W. A. Newman Dorland has been elected deputy governor of the Illinois Society of the Order of Founders and Patriots.——A protest has been made by Miss Mary Bartelme, assistant to Judge Arnold of the Juvenile Court, against the action of the city physician in disposing of Dr. Clara P. Seippel, who has been on duty in that court, and assigning her work to a male physician.

Cook County Hospital.—At a meeting of the attending staff of the Cook County Hospital, April 12, a resolution was adopted thanking Mr. Clayton F. Smith, who resigned recently to accept the position of city treasurer, for his efficient cooperation in the provision of adequate medical and surgical care for the patients.——Mr. Michael Zimmer, formerly warden of the State Penitentiary, Joliet, was appointed superintendent of Cook County Hospital, April 19, to succed Mr. Smith.

Hospital Items.—The cornerstone of the Swedish Mission Covenant Hospital at Foster and California avenues was laid, April 22. The hospital, which will cost $175,000, will accommodate 120 patients.——The Memorial Hospital has acquired the Douglas Hospital property at Rhodes Avenue and Thirty-Second Street.—The new buildings of the Chicago Lying-In Hospital, at Fifty-First Street and Vincennes Avenue, are almost completed. The buildings and equipment will cost $350,000, and it is expected that the institution will be ready for occupancy early in June. It will accommodate 120 patients, one third of whom will be free, one third, part-pay, and one third, full-pay patients.

Chicago Men Address Societies.—From May 6 to 13, Dr. Otto T. Freer will give a course of lectures illustrative of operations and demonstrations at Portland, Ore., by invitation of the Portland Ophthalmological, Otological and Laryngological Society.——Dr. Clarence L. Wheaton delivered a public lecture on "The Prevention of Tuberculosis," and Dr. Charles H. Parkes made an address on "Some Reasons Why a Tuberculosis Sanatorium Should Be Established," in the Grand Theater, Keokuk, Iowa, March 23.——Dr. Lewis L. McArthur read a paper on "The New Method of Utilizing the Gallbladder in Gastric Surgery," and Dr. Harry S. Gradle read a paper on "Eye Symptoms in Tabes Dorsalis," before the Lynn County Medical Society, at Cedar Rapids, Iowa, March 20.

INDIANA

Health Officers School.—The annual conference and school for health officers will be held in Indianapolis, May 22 and 23.

Personal.—Dr. Lorin W. Smith, Wabash, who suffered the amputation of both legs as the result of burns received in an automobile accident recently, is reported to be doing well at the Park Hospital, Wabash.——Dr. Paul E. Bowers, medical superintendent of the Indiana Hospital for Insane Criminals, and the Indiana State Prison Hospital, Michigan City, delivered a series of lectures on "Criminals" and "Treatment of Criminals," to the police departments of Hammond, East Chicago and Gary, recently.

Oral Inspection of Schoolchildren.—The Indianapolis Dental Society and the city board of health have announced plans for a system of oral hygiene inspection of city schoolchildren. The teeth of all schoolchildren will be examined without cost. Following the examination, a card will be sent to the parents indicating that dental work should be done. If the parents feel unable to pay for the necessary work, it will be done free. It is planned to make this survey one of the most complete that ever has been conducted in any city of the United States.

KENTUCKY

Nurses Home Needed.—The Norton Memorial Infirmary, Louisville, has applied for permit to erect a three-story nurses' home at a cost of $40,000. The building will be of brick, 29 by 145 feet, and will contain rooms for forty-eight nurses, besides the necessary offices, recreation rooms and lecture room.

Postgraduate School for Nurses.—The Kentucky State Board of Tuberculosis Commissioners has decided to establish a postgraduate school to train nurses for public health. The school will be known as the Kentucky State Board of Tuberculosis Commissioners Postgraduate School for Public Health Nursing. Headquarters will be maintained at Louisville with branches at Lexington, Versailles and other points throughout the country. Tuition to Kentucky nurses will be free. The course will include three to five weeks' instruction and demonstration of public health nursing of the sick; two weeks' instruction in the proper management of sick babies; a three weeks' course or longer in the special training and management of tuberculosis patients in the home and in the clinic, and in addition a special course of lectures will be given by Dr. John B. Floyd, medical director and superintendent of the Waverly Hills Sanatorium, on "Medical Aspects of Tuberculosis."

LOUISIANA

Health Survey of New Orleans.—A health survey of New Orleans will be started next month by the Metropolitan Life Insurance Company, which will bring 168 men to aid in making a thorough survey of the health conditions.

MAINE

Personal.—Dr. Carl M. Robinson, Portland, has returned from France where he was on duty with the Harvard Unit on the western front.

Osteopathic Bill Fails of Passage.—The senate osteopathic bill, which provides for a separate board of examiners, was killed during the last week of the legislature.

MARYLAND

Osler Testimonial Fund.—The Medical and Chirurgical Faculty of Maryland has created a fund of $10,000, to be known as the Osler Testimonial Fund, the income of which is to be used for the purchase of books for the faculty, library, and for the upkeep of the hall which bears Sir William Osler's name.

New Faculty Officers.—At the one hundred nineteenth meeting of the Medical and Chirurgical Faculty of Maryland, the following officers were elected: Dr. William S. Halsted, Baltimore, president; Drs. James E. Deets, Clarkesburg, James McF. Dick, Salisbury, and Julius Friedenwald, Baltimore, vice presidents; Dr. John Staige Davis, Baltimore, secretary, and Dr. William S. Gardner, Baltimore, treasurer. The medical examiners appointed were: Drs. Charles C. W. Judd, Baltimore, and Albert L. Wilkinson, Raspburg.

NEW YORK

Personal.—Dr. Francis C. Clark, Staten Island, deputy health officer of the port of New York, has been granted a leave of absence in order to accept active duty as assistant surgeon in the United States Navy, and has been ordered to duty at the Recruiting Station, Paterson, N. J.

Dental Standard of New Columbia School.—The dental school which is being organized as a part of Columbia University will not be a part of the medical school but will be closely allied with it. Dental students will be required to complete two years in the college, spend two years in the medical school, gaining a foundation in medicine, and then complete their course by two years' special training in dentistry.

Training for Hospital Work.—The West Side Y. M. C. A. is cooperating with the Home Defense League in providing a course of training in regular first aid work. Dr. Theron W. Kilmer, for eight years surgeon of the New York militia, and a corps of physicians and nurses will begin the training, April 30. The course will be in cooperation with the Red Cross Society, and the latter will grant diplomas to all who pass the examination. It is said that many large business firms will send groups of employees.

Alienists to Test Prisoners Condemned to Death.—Owing to the many attempts to delay the execution of condemned prisoners on the ground of insanity, Governor Whitman announces his intention of having commissions of alienists examine every condemned prisoner at a considerable period before the date set for electrocution. The commission appointed to examine all those now waiting execution in Sing Sing Prison consists of Drs. Charles W. Pilgrim, Poughkeepsie, Russell F. Kieb, and George A. Smith.

To Improve Hotel and Restaurant Kitchens.—The investigation of hotel and restaurant kitchens conducted last year by the department of health repeatedly showed that expensive structural alterations, insisted on by the department as necessary to promote sanitary conditions, could have been avoided by proper architectural planning. In order to obviate these difficulties, the department has addressed a letter to all architects of the city, enclosing a copy of the rules and regulations relating to hotels and restaurants, and a copy of the score card used by the department's inspectors.

Infantile Paralysis.—The finding of two cases of infantile paralysis, which was announced last week by the health department, occurred at College Point, Queens, and the other at Woodhaven, Queens. Both children were removed to Willard Parker Hospital. The health department is doing all it can to prevent the recurrence of an epidemic such as was experienced last summer. It urges the people that they must do their share by special attention to personal cleanliness and cleanliness in their surroundings.

Society Wins Suit.—William E. Godfrey, superintendent of an establishment in Brooklyn, which advertised a three-day liquor cure, was arrested in March, 1914, on the charge of practicing medicine without a license, waived examination and, when the case came to trial, the charges were dismissed. Godfrey then sued the Medical Society of the County of New York for $25,000 damages and was given a verdict of $2,500 by the General Sessions, Manhattan. The Appellate Division, on April 20, reversed the decision of the lower court and dismissed the complaint.

State Society Meeting.—The Medical Society of the State of New York met in Utica, April 24. The election of officers resulted as follows: president, Dr. Alexander Lambert, New York; vice presidents, Drs. Thomas H. Halsted, Syracuse; Albert W. Ferris, Saratoga, and Marcus B. Heyman, Central Islip; secretary, Dr. Floyd M. Crandall, New York; assistant secretary, Dr. Edward L. Hunt, New York; treasurer, Dr. Frank Van Fleet, New York, and assistant treasurer, Dr. Harlow Brooks, New York. The principal discussion of the meeting was on "Compulsory Health Insurance."

Industrial Disease Must Be Reported.—The State Industrial Commission announces:

> Inasmuch as cases of industrial diseases are not being reported by medical practitioners or institutions to the Department of Labor, State Industrial Commission, as required by Statutory law, it is necessary to call the attention of all practitioners of medicine and institutions of their obligation to report all such cases to the Department of Labor, State Industrial Commission.
>
> Article V, Section 65 of the Labor Law, making this requirement, has been in force since 1912 and has been in no way nullified by later ordinances of local boards of health of cities or towns. Attention is also called to the fact that a penalty of a fine is attached to failure to report these cases.

Bill to Develop State Hospitals Signed.—Governor Whitman has signed the Sage Hospital Bill, which provides for the creation of a commission consisting of the chairman of the state hospital commission, state engineer, state architect, chairman of the financial committee of the state legislature, and two persons appointed by the governor to adopt a general plan for hospital development. The bill carries appropriations of $20,000 for the expenses of the commission, $100,00 for new buildings at the Middletown State Hospital, and $299,255, the unexpended balance appropriated for work at Mohansic, to be applied in beginning construction of a new state hospital at Marcy, near Utica.

Public Health Committee of the Academy of Medicine.—This committee has presented its report for February and March showing a wide range of activities. It has cooperated with the Municipal Civil Service Commission in choosing men requiring special medical training for different positions. It has considered harbor pollution; the organization of health districts, the health aspects of the Gary plan of school administration, and the possibility of a uniform system of hospital record keeping. It has expressed opinions on legislative matters, such as a charter amendment providing for filling the position on the board of health that will be made vacant when the Quarantine Station of the Port of New York passes into control of the federal government, the study of legislation with reference to habit forming drugs, etc.

PENNSYLVANIA

Philadelphia

Physicians' Hospital Incorporated.—Incorporation papers have been filed for the Physicians' General Hospital, Philadelphia.

New Tuberculosis Dormitory.—At Byberry Farms, the city is erecting another dormitory which will accommodate 300 tuberculosis patients. This will round out the new institutions about the city.

More Space Provided.—In answer to the request of the government for additional space for care of men wounded in war or in any emergency service, the women of Frankford have raised $3,500 for additional equipment in the Frankford Hospital.

Flies.—Introducing Fly Week, about 800 children known as juvenile sanitary inspectors, paraded from Star Garden, Seventh and Lombard Streets. At the close of "Fly Week" will come "Clean Up Week" and this will include baby welfare work.

Public Health Day.—Public Health Day was observed in Philadelphia, May 3. The Child Federation arranged elaborate plans for its observance. At night there was a massmeeting at the Academy of Music, when the effect of clean streets on public health was discussed. Speakers of national prominence were present, and a motion picture film prepared by the Civic Club was shown.

College of Physicians Meeting.—At the meeting of the College of Physicians of Philadelphia, May 2, Dr. John H. Girvin read a memoir of the late Dr. Edward L. Duer. A portrait of Dr. John H. Packard was presented on behalf of the donor, Dr. Francis R. Packard, by Dr. Richard H. Harte, and Drs. Emanuel Libman and Reuben Ottenberg, New York, read a joint paper on "Observations on Transfusion."

Resolution on Resignation of Hirsh.—At a business meeting of the Philadelphia County Medical Society, April 18, a minute was passed on the resignation of Dr. A. Bern Hirsh, editor of the *Weekly Roster,* in which the society placed on record its high estimate of the public spirit and service of Dr. Hirsh in organizing the plan for a county society publication, recognized his life-long devotion to the high ideals of the profession, regretted the necessity for his resignation, and tendered its thanks to Dr. Hirsh.

Industrial Accidents Costly.—S. S. Ridley of the state department of labor, and editor of the *Journal* of the Pennsylvania State Department of Labor and Industry, gave impressive figures before the Monday conference in the New Century Club, April 23. Seven hundred and fifty persons have been killed in industrial plant accidents during the first three months of this year. Last year the compensation of these accidents amounted to $4,250,000. At the rate of accidents shown so far in 1917, the compensation will amount to $7,000,000.

Personal.—Dr. Orlando H. Petty, a medical inspector in the bureau of health, has enlisted in the Navy. Dr. Wilmer Krusen, director of public health, has appointed Dr. David W. Kramer to fill the vacancy.——Dr. Washington Merscher, former resident physician at the Germantown Hospital, has been appointed lieutenant in the Medical Corps of the National Guard of Pennsylvania, and assigned to the second field artillery.——Dr. Abram B. Hirsh has resigned as editor of the *Weekly Roster* of the medical organizations of Philadelphia.——Dr. Christian B. Longenecker is the new editor of the *Weekly Roster* of the medical organizations of Philadelphia.

Campaign Against Flies.—The cooperative committee for fly extermination plans to have each of the 7,000 stables in this city inspected once a week for two months this summer. The sum of $1,100 has been received, though no solicitation had been made. The finance committee is ready to spend $15,000, if necessary, on the work of extermination. One hundred and fifty inspectors will be needed for the work, fifty-eight of whom have already volunteered. Dr. Walter S. Cornell, chief medical inspector in the public schools, reports that he is planning a series of lessons in which children will be taught the life history, the injuriousness, and the importance of exterminating the fly.

Medical Institutions.—The new maternity building named for the late Dr. Elizabeth M. Peck at the West Philadelphia Hospital for Women was dedicated, April 23. One of the chief speakers was Mrs. Rudolph Blankenburg, wife of the former mayor, whose mother was one of the first women physicians in Philadelphia. Forty patients can be accommodated in the new building, which was erected at the cost of $105,000.——The Women's Medical College has established an obstetric fellowship amounting to $1,000, to be awarded annually to any medical woman of especial ability, who, following the undergraduate course, has completed at least one year of hospital service, including work in the maternity wards, and one year of further practice. The amount is to cover twelve months of special work as fellow in obstetrics, with the condition that the holder of the fellowship shall thereafter continue the practice of this specialty.

CANADA

British Columbia Vital Statistics.—The vital statistic report of the providence of British Columbia for 1916 shows that the total population is 383,380. During 1916, there were 9,841 births, 3,887 deaths, and 3,169 marriages, a rate per thousand of population, respectively, of 25.67, 10.14 and 8.27.

Personal.—The following Canadian medical men overseas have recently been promoted to the rank of lieutenant-colonel: John A. Amyot, University of Toronto; Charles E. Doherty, New Westminster, B. C.; Thomas A. Starkey, Montreal; Robert B. Wilson, Montreal, and Richard Raikes, Midland, Ont.——Gen. John Taylor Fotheringham, C. M. G., Toronto, has returned, and will proceed to Ottawa at an early date to take up his new duties of inspector-general for invalids. It is not yet known whether he will reorganize the hospitals and staffs of the Dominion, or whether those hospitals will remain under the special Hospitals Commission.—Lieut.-Col. Arthur Winters, formerly of Toronto, but who was studying in England at the outbreak of war, is now A. D. M. S., Quebec City Military District.

Consumption Among Canadian Troops.—The secretary of the Canadian Military Hospitals Commission gave evidence recently before the special parliamentary committee dealing with the treatment and employment of returned soldiers in which he favored more diversion and entertainment for hospital patients. Of the different tuberculosis hospitals in Canada, there were 674 beds available for these patients, and 602 of these were occupied. By the middle of August there would be accommodation for 1,200, and it was likely that a large central sanatorium would be required with 500 extra accommodation. A total of 227 "camp cases" had been handed over to the commission. At one time these numbered 60 per cent. of all the tuberculosis cases. The commission had simply been swamped by the "camp cases," and the future number depends on the rigidity of the examination. The secretary also announced that $100,000 subscribed by Mr. James Carruthers, Montreal, was being used for emergency cases.

GENERAL

Pathologists and Bacteriologists to Meet.—The next meeting of the American Association of Pathologists and Bacteriologists will be held at Minneapolis, March 29 and 30, 1918.

Biologic Products.—The government has given notice that the licenses of certain German manufacturers of biologic products have been revoked because it has been impossible to inspect them within the time required by regulation, and on account of present conditions they will be inaccessible to inspection for an indefinite period. Among the concerns affected by this notice are Chemische Fabrik auf Actien, Berlin; Farbwerke, vormals Meister Lucius and Bruning, Hoechst on Main; the Behringwerk, Marburg; E. Merck, Darmstadt; Kalle & Co., Biebrich; Pharmaceutische Institut Ludwig Wilhelm Ganz, Oberursel bei Frankfort, and Chemische Fabrik Güstrow, Güstrow, i. M.

National Association for Study and Prevention of Tuberculosis.—The thirteenth annual meeting of the National Association for the Study and Prevention of Tuberculosis will be held at the Hotel Sinton, Cincinnati, May 9 to 11. The bulletin of the association for April contains a preliminary program, information about sessions, hotels, railroad rates, entertainments, etc. In addition to the meetings of the advisory council, there will be separate clinical, pathologic and sociologic sections. In conjunction with the annual meeting of the National Association, the twelfth spring meeting of the American Sanatorium Association will be held at the Hotel Gibson, May 9. Dr. Charles J. Hatfield, 105 East Twenty-Second Street, New York, is executive secretary of the association.

Bequests and Donations.—The following bequests and donations have recently been announced:

New York Hospital for the establishment of a urologic department, a sum estimated at between $4,000,000 and $5,000,000, by the will of James Buchanan Brady, with the specifications that Dr. Oswald S. Lowsley shall be first director of the new department of the hospital and that if, in the further development of surgery or medicine, such a department shall become unnecessary, the legacy shall be used by the Society of the New York Hospital to service as nearly kin to the above as practical.

St. Christophers Hospital, Philadelphia, $2,000, by the will of David Vetter.

University of Pennsylvania, a reversionary bequest of the estate of John G. Johnson after the death of four heirs.

Mount Sinai Hospital Society, Boston, $1,000, by the will of Gustavus A. Peavy.

New England Hospital for Women and Children, an anonymous gift of $5,000.

American Hospital for Italian Wounded, Florence, Italy, $2,200, the proceeds of a musicale held in Chicago, April 16.

Examination for Anatomist.—The United States Civil Service Commission announces an open competitive examination for anatomist for both men and women to be held May 16, in various places in the United States. A vacancy in the Army Medical Museum, office of the Surgeon General, Washington, D. C., at $1,600 and future similar vacancies will be filled from this examination. Applicants must be citizens of the United States, must possess collegiate degrees and must have a thorough knowledge of the anatomy, of diseases brought by mosquitoes, of the relation of mosquitoes to the transmission of disease, of pathology, bacteriology, and pathologic histology, and must be capable of making photomicrographs; must understand microscopes and must be able to prepare, card and keep in order museum specimens. Applicants must have resided for at least one year in the state or territory in which they are examined, and must submit photographs to the examiner on the day of examination. Application should be made to the Civil Service Commissioner, Washington, D. C., or to the secretary of the local Civil Service Commission, for form 1312, stating the title of the examination desired.

Museum of Safety.—On account of the existence of a state of war the American Museum of Safety deemed it undesirable to hold the proposed dinner in connection with the presentation of the medals of the museum planned for April 19. The awards of the medals for the year are as follows:

The E. H. Harriman Memorial Medals: Awarded annually to the American steam railroad most successful during the preceding year in protecting the lives and health of its employees and the public, with replicas, in silver and bronze, to the division of a railroad and a railroad employee contributing most to the safety record. The gold medal to the Alabama Great Southern Railway, Cincinnati; the silver replica to the Illinois Division of the Illinois Central Railway, Chicago, and the bronze replica to Mr. James A. McCrea, General Manager of The Long Island Railroad Company, New York.

The Anthony N. Brady Memorial Medals: Awarded annually to the American electric railway accomplishing most in the preceding year for the safety and health of its employees and passengers, with silver and bronze replicas to the division and employee foremost in attaining the result. The gold medal to the Connecticut Company, New Haven, Conn.; the silver replica to Mr. Seth W. Baldwin, Assistant Attorney in charge of Claim Department, the Connecticut Company, and the bronze replica to Mr. Walter J. Flickinger, secretary to the president, the Connecticut Company.

The Scientific American Gold Medal: For the most efficient safety device invented within a certain number of years and exhibited at the Museum. To the Pullman Company, Chicago.

The Travelers Insurance Gold Medal: For the American employer who has achieved greatly in protecting the lives and limbs of workmen. The Commonwealth Steel Company, St. Louis.

The Louis Livingston Seaman Gold Medal: For progress and achievement in the promotion of hygiene and the mitigation of occupational disease. The Julius King Optical Company, New York.

Medical Museum.—The annual meeting of the American section of the International Association of Medical Museums was held, April 5, in New York, and the following officers were elected: president, Dr. Oskar Klotz, Pittsburgh; vice presidents, Drs. W. M. L. Coplin, Philadelphia, Harold E. Robertson, Minneapolis, and Daniel S. Lamb, Washington, D. C.; councilors, Drs. Aldred S. Warthin, Ann Arbor, Mich., W. M. Late Coplin, Philadelphia, Howard T. Karsner, Cleveland, Milton C. Winternitz, Baltimore, and Mr. R. A. Lambert, New York; secretary-treasurer, Dr. Maude E. Abbott, Montreal, and assistant secretaries, Drs. Joseph Kaufmann and Louis Gross, Montreal. Closer affiliation with the American section of the International Association of Medical Museums was urged, and a delegate to the annual meeting of the latter body was appointed. A committee was appointed to organize a central bureau for the permanent preservation of the results of scientific research, especially histologic material. A committee on the organization of a supply of square glass museum jars for the continent of America reported that arrangements had been made with a Pittsburgh firm to manufacture these jars in ten standard sizes, to be supplied at prices free of duty to the members of the association and scientific institutions. The scientific program was devoted to papers and discussions on "Museum and Laboratory Technic," "Presentation of the Results of Medical Research," "Microscopic Technic," "Museum Teachings," and special exhibits. The scientific exhibit of the association was kept open for three days for the benefit of the members of the Association of Pathology and Bacteriology.

FOREIGN

Hertwig Given Helmholtz Medal.—The Academy of Sciences at Berlin has presented the Helmholtz medal this year to Prof. R. v. Hertwig of the University of Munich for his microscopic research on zoologic subjects.

Large Legacy for Hospital at Marseilles.—Our Italian and French exchanges state that an Italian who had long made his home at Marseilles has bequeathed $7,000,000 to the city of Marseilles, mainly for the purpose of founding and maintaining a large hospital.

Imposing New Hospital at Madrid.—The *Siglo médico* brings illustrations of a recently completed, ornate and imposing hospital erected for charity patients by a wealthy widow, Señora Curiel. There are 200 beds ready, but only eighty are occupied, as it is said that the streets leading to the hospital are impassable at present for an ambulance. The hospital and its grounds fill an entire city block, and it is said to be a model in every respect.

Taxation of Proprietaries in France.—The syndicate of the organized manufacturers of pharmaceutic specialties in France has appealed to the authorities to refrain from crushing out by ruinous taxation the industry of pharmaceutic specialties menaced by bills now pending. They accept a tax, but insist that it should be applied to all *médicaments composés,* to which the manufacturer or the vendor affixes a special name or claims exclusive property in, or announces its superiority by means of advertisements, circulars or labels. They urge further that the tax should be collected only on such articles as are offered for sale, while the amounts donated free of charge to physicians and hospitals should be exempt from the tax. They also insist that the tax should be extended to cover all proprietary manufactured articles of the kind, perfumery, hygienic products and toilet articles, champagne, liqueurs, etc.

Deaths in the Profession Abroad.—I. A. Shabad, professor of pediatrics at the state Woman's Medical College at St. Petersburg, aged 47. He had made a special study of rachitis, its origin, nature and treatment. The Journal has summarized his communications as fast as they appeared, his success in treatment having apparently confirmed the soundness of his views. His painstaking and extensive study of individual cases over long periods has provided a basis for future investigators.——A. Prieur, editor of the *France médicale,* which he transformed into a historical journal, founder of the Société française d'histoire de la médecine, collaborator on the *Mercure de France,* aged 52. With him disappears probably the *France médicale.* It suspended publication at the outset of the war.——W. Winternitz, the pioneer of scientific hydrotherapy, professor of internal medicine at the University of Vienna since 1881, aged 82. He was docent of hydrotherapy from 1865 to 1874, and founded the monthly *Blätter für klinische Hydrotherapie* in 1890. His private institution for hydrotherapy was at Kaltenleutgeben, near Vienna.——C. Hartwich, professor of pharmaceutical chemistry, at the University of Zurich, aged 65.——M. Bianchi, assistant professor of hygiene at the University of Naples, aged 28.——V. F. Snegireff, professor of diseases of women and children at the University of Moscow, aged 70.

PARIS LETTER

Paris, April 5, 1917.

The War

SCIENTIFIC DEGREES IN THE ORGANIZATION OF THE HEALTH SERVICE

Aristide Prat, deputy from the department of the Seine et Oise, proposed a measure intended to assure to physicians and pharmacists of the reserve of the territorial army in the organization of the military health service a grade corresponding to their scientific standing. In advocating his proposition, Prat said that degrees constitute an important element in the appraisement of the professional standing of physicians and pharmacists. The presidential decree of Dec. 31, 1915, permitting rapid promotion to the higher grades of the organization of members of the teaching faculties and staffs of hospitals, marked the beginning of an auspicious though incomplete reform (The Journal, Feb. 12, 1916, p. 522). The influential public will not fail to have recourse in all such delicate questions to the advice of the Academy of Sciences and the Academy of Medicine in their superior councils and the departments of hygiene. However, there is no assurance that they will not be continued in the inferior grades. The laureates of the Academy of Sciences and the Academy of Medicine, the doctors of medicine, equally with the doctors of science, were required to furnish evidence of their researches in order to obtain their titles. The professors of the schools of medicine and pharmacy, the prosectors, chief lecturers and chiefs of clinics of the Faculty of Medicine, and the senior interns of hospitals of cities possessing a faculty of medicine likewise obtained their degrees by laborious and difficult efforts; more often, far from assuring them an advantage in the military organization, their long service in the laboratories and hospitals had prejudiced their advancement. It is thus that the former interns of the hospitals, obliged to defer for four years the support of their theses, find themselves, in spite of their medical experience, lacking by four years of seniority the grade of aide-major over their comrades, less favored than they at the beginning of their internship.

Prat demanded that, during the continuance of hostilities, power be given to promote at once to the grade of physician-in-chief of the first class (corresponding to the grade of colonel), on condition of having possessed the grade of aide-major of the second class (sublieutenant), the members, national, honorary or corresponding, of the Academy of Sciences or the Academy of Medicine and the members of the Superior Council of Hygiene of France; likewise to promote at once to the grade of physician-major of the first class (Commandant) the titulary professors of the schools of medicine and pharmacy, the professors of the Faculty of Science, the laureates of the Academy of Sciences and the Academy of Medicine, and the members of the Commissions of Departmental Hygiene; finally, the power to promote at once to the grade of physician-major of the second class (captain) the assistant professors of the medical schools, the masters of conferences of the Faculty of Sciences, the prosectors, chief lecturers and chiefs of clinics of the Faculty of Medicine, the senior house surgeons of the hospitals of cities possessing a faculty of medicine, received within the last ten years in medicine, or pharmacists of the first class, and the members of the health commissions of the district.

The proposed measure has been favorably received in medical and parliamentary circles and has been referred to the Commission of the Army. It is probable that, after consideration by this commission, application will be made for a decree similar to that applying to the body of teachers by the decree of Dec. 31, 1915.

THE ORGANIZATION AND FUNCTIONS OF ADVANCED HOSPITALS

The experience in offensive operations has rendered it necessary to require that army corps install their hospitals as near as possible to the troops, in zones that escape the systematic bombardment by the artillery of the enemy; only such disposition will enable them rapidly to give the necessary aid to the wounded. The quartermaster general of the army has announced the precise regulations for the organization and functions of these advanced hospitals.

These ambulances, to which are attached one or several complementary surgical groups, constitute generally what is called *"groupements sur tentes"* (tent hospitals), on which devolve the receiving and distribution of cases, and the surgery of the greatest urgency. The wounded are taken there from the first aid stations by automobile ambulance and subjected to a first selection; the most severely wounded, those injured too severely to be transported farther, are operated on there; the slightly wounded, after examination and dressing, are sent to the evacuation hospitals or to the evacuation stations; both the slightly and severely wounded, whether evacuable or not, for whom intervention is necessary, are, after dressing at those stations, directed without delay to the central hospitals or to evacuation hospitals.

The relation of the advanced hospitals to those in the rear must be regulated with care, and, when the flow of wounded to an evacuation hospital of the first line becomes too great, the currents of evacuation must be directed to the hospitals of the vicinity or of the second line. Failure to observe the rules regarding the work of selection of wounded and the surgical operations devolving on the evacuation hospitals will rapidly result in overcrowding and the paralysis of their efforts.

The evacuation of the wounded from the first aid stations on the sanitary formations where they may be hospitalized must be done with the shortest possible delay. In the case particularly of the severely wounded—those with injuries or presumed injuries of the viscera (brain, thorax or abdomen), vascular or articular wounds, or compound fractures—retention in the intermediate formations between the first aid stations and the surgical stations must be interdicted rigorously, save in case of immediate danger to life. Therefore, redressings, unless absolutely necessary, should be avoided, and incomplete operations may be done, to be completed in the evacuation hospitals. On the contrary, all antitetanic injections must be done in the advanced hospitals.

These advanced hospitals, therefore, will most often be installed under tents, this character of construction permitting of rapid installation. If, however, the installation takes on a fixed character, the tents are replaced by barracks and the tents utilized anew farther forward, as the line advances. A group of two or three hospitals under tents will be composed of ten or twelve tents—two as receiving and dressing rooms, five or six tents for hospitalization (from 150 to 200 beds), and two tents for general purposes.

FILIFORM DRAINAGE IN WAR SURGERY

Moreau, of the marine service, communicated to the Paris Surgical Society the result of many observations on filiform drainage (Chaput) applied in cases of war surgery, and commented on the value of this form of drainage as compared with tube drainage. The lumen of the tube drain is often obliterated by coming in contact with a bone or a tendon, while under the same conditions the filiform will drain perfectly. Much of the time pus does not escape through the lumen of a tube drain, but around the outside of it; the terminal orifice of the drain is frequently occluded by the dressing; the tube sometimes falls into the natural cavities or into the dressings, while the filiform drain is not exposed to the same drawbacks. While one is obliged to remove tube drains on account of becoming obstructed, it is necessary to move the filiform drain only slightly to reestablish the drainage which may have been momentarily arrested by the purulent concretions. On the posterior part of the trunk and the limbs, tubes which emerge obliquely are flattened by the weight of the body or limb, while the filiform drain drains perfectly under the same conditions. Finally, tubular drains are often painful, but the patient will not suffer if the filiform drain is employed.

SPECIALISTS FOR EXAMINATION OF SOLDIERS

Thibierge recently directed the attention of the medicolegal society to the desirability of having specialists examine the soldiers primarily, before they are dragged from hospital to hospital, for a disease which is really easily curable, and not subjecting them to examination by a physician not especially competent, and who is called to treat them, and thus delay their recovery and return to service. The medicolegal society has declared itself in favor of such special examination, notably in cases of diseases of the nervous system, of the skin, and the organs of sense, being made by specialists.

Free Milk

The prefect of the department of the Seine has brought to the notice of the creameries and the retailers of milk that by arrangement of the municipal council of Paris, orders for milk, approved by the bureau of charities, will be delivered to deserving families for the feeding of their children in the amount of 1 liter per day for each infant under the age of 3 years. These orders will be redeemed by the cashier of the bureau of charities at the price of 50 centimes per liter, fixed by the ordinance of taxation of February 13 last.

Marriages

Martin Fred DuFrenne, M.D., Sun Prairie, Wis., to Miss Mary Pasich of Buhl, Minn., at Middleton, Wis., April 18.

Merritt LaCount Jones, M.D., Wausau, Wis., to Miss Grace Hayward Ivers of Cambridge, Mass., March 21.

George Victor Genzmer, M.D., Plainfield, N. J., to Miss Ethel Sherwin Smith of Philadelphia, April 11.

Margaret Dorothy Wermerskirchen, M.D., to Mr. Daniel Coleman, both of Milwaukee, Wis., March 2.

Harry Louis Alexander, M.D., to Miss Laura McElivian Stryker, both of New York, April 18.

Marion Trueheart, M.D., Sterling, Kan., to Miss Myrtie Proctor of Garden City, Kan., April 18.

Ada Belle Blair, M.D., Altoona, Pa., to Mr. W. Emery Mackey, at Pittsburgh, March 30.

Eugene Elgin, M.D., East Berlin, Pa., to Miss Celia Oneda Shriver of Hanover, Pa., April 10.

Deaths

William Henry Taylor, M.D., Richmond, Va.; Medical College of Virginia, Richmond, 1856; aged 81; a member of the Medical Society of Virginia; for many years professor of chemistry, toxicology and medical jurisprudence in his alma mater, and at the time of his death emeritus professor; for forty-five years coroner of Henrico County, Va.; state chemist of Virginia, and for many years a member of the Richmond Board of Health; a surgeon in the Confederate service during the Civil War; at one time a member of the editorial staff of the *Old Dominion Journal of Medicine and Surgery;* died at his home, April 14.

Henry Wells Dewey, M.D., Tacoma, Wash.; College of Physicians and Surgeons in the City of New York, 1881; University of Vermont, Burlington, 1882; aged 57; a Fellow of the American Medical Association; once president of the Washington State Medical Association, and twice president of the Pierce County Medical Society; who was appointed a member of the State Board of Medical Examiners in 1893; a practitioner of Tacoma for nearly thirty years; died in his office, April 12, from cerebral hemorrhage.

Joshua Ware Read, M.D., Newark, N. J.; Bellevue Hospital Medical College, 1867; aged 79; formerly a Fellow of the American Medical Association; a member of the Medical Society of New Jersey; police surgeon of Newark from 1878 to 1882; for many years a member of the board of education, and once president of the Practitioners' Club of Newark; coroner of Essex County; died at his home, April 17.

Herbert Seymour Gay, M.D., Boston; Harvard Medical School, 1902; aged 35; a Fellow of the American Medical Association; professor of gynecology in Tuft's College Medical School, Boston; assistant surgeon to the Boston Dispensary in the department for diseases of women; gynecologist to Mount Sinai Hospital and Tremont Dispensary; died at his home, April 21, from pneumonia.

Hugh B. Caffey, M.D., Pittsburg, Kan.; Tulane University, New Orleans, 1901; aged 37; a Fellow of the American Medical Association, and American Academy of Ophthalmology and Oto-Laryngology; first lieutenant, M. R. C., U. S. Army; a specialist on diseases of the eye, ear, nose and throat; died in the Christian Hospital, Kansas City, Mo., April 16, from brain tumor, shortly after an operation.

John Jay Buckley, M.D., Missoula, Mont.; College of Physicians and Surgeons in the City of New York, 1878; aged 64; a Fellow of the American Medical Association, and formerly president of the Cass County (N. D.) Medical Society; chief surgeon of the Northern Pacific Railway, western division, from 1887 to 1903; died at his home, April 13, from arteriosclerosis.

Frank Ernest Ruggles, M.D., Bay City, Mich.; University of Michigan, Ann Arbor, 1892; aged 47; a Fellow of the American Medical Association; once president of the Bay County Medical Society, and health officer of Bay City; a specialist on diseases of children; died at his home, April 16, from pneumonia.

George Kent Varden, M.D., Atlanta, Ga.; Medical College of Ohio, Cincinnati, 1905; aged 33; a Fellow of the American Medical Association; a specialist on diseases of children; a member of the faculty of Emery University and of the medical staff of St. Joseph's Infirmary, Atlanta; died at his home, April 11.

Clyde Jason Elmer, M.D., Los Angeles; St. Louis University, 1908; aged 41; formerly a Fellow of the American Medical Association; a member of the Medical Society of the State of California; died in the Clara Barton Hospital, Los Angeles, February 1, from gastric ulcer complicated by diabetes.

Albert Mott, M.D., Cohoes, N. Y.; Long Island College Hospital, Brooklyn, 1873; aged 66; formerly a member of the Medical Society of the State of New York; a member of the board of health of Cohoes since 1896 and health officer of the city since 1905; died at his home, April 14.

William Dean Wilson, M.D., Mount Clemens, Mich.; Rush Medical College, 1878; aged 60; a member of the Michigan State Medical Society; for nearly forty years a practitioner of Mount Clemens and mayor of the city in 1898; died in his apartment, April 13, from heart disease.

Henry Oliver Ely, M.D., Binghamton, N. Y.; College of Physicians and Surgeons in the City of New York, 1868; aged 70; formerly a member of the Medical Society of the State of New York; a police surgeon in New York City in 1870 and 1871; died at his home, April 21.

John D. Eakins, M.D., Gallipolis, Ohio; Jefferson Medical College, 1871; aged 66; formerly a Fellow of the American Medical Association; a member of the Ohio State Medical Association; for two years a member of the state legislature; died at his home, April 20.

Walter Stephen Chandler, M.D., Mount Olivet, Ky.; Medical College of Ohio, Cincinnati, 1889; aged 53; formerly a Fellow of the American Medical Association; a member of the Kentucky State Medical Association; died at his home, March 14, from pneumonia.

Wilmer Brown Hoge, M.D., Grand Island, Neb.; University of Michigan, Ann Arbor, 1886; aged 54; formerly a Fellow of the American Medical Association; for many years local surgeon of the Union Pacific System at Grand Island; died at his home, March 4.

Dunham E. Ash, M.D., Bradford, Pa.; Medical College of Ohio, Cincinnati, 1867; aged 65; a member of the Medical Society of the State of Pennsylvania; a member of the common council and select council of Bradford; died at his home, April 20.

Ezra S. Meals, M.D., Harrisburg, Pa.; Cincinnati College of Medicine and Surgery, 1874; aged 65; a member of the Medical Society of the State of Pennsylvania; who was serving his second term as mayor of Harrisburg; died, April 18.

Edgar Allen, M.D., Lafayette, N. J.; Jefferson Medical College, 1890; aged 55; formerly a Fellow of the American Medical Association; for the last two years postmaster of Lafayette; died at his home, April 17, from cerebral hemorrhage.

Joseph Michael O'Connor, M.D., Biddeford, Me.; Medical School of Maine, Brunswick, 1898; aged 40; a Fellow of the American Medical Association; a specialist in obstetrics; died at his home, April 20, from ptomain poisoning.

Hiram Sterling Pomeroy, M.D., Auburndale and Boston, Mass.; University of Leipzig, Germany, 1885; aged 68; a Fellow of the American Medical Association; died at his home in Auburndale, April 21, from heart disease.

George Kelsea Hildreth, M.D., New York; Harvard Medical School, 1905; aged 37; a specialist on diseases of the ear, nose and throat; a member of the staff of St. Vincent's Hospital; died at his home, April 6, from carcinoma.

William Packer Burdick, M.D., Kane, Pa.; University of Vermont, Burlington, 1885; aged 57; a Fellow of the American Medical Association; a specialist in anesthesia; died in the Kane Summit Hospital, April 16.

Samuel S. Cox, M.D., Lorain, Ohio; Western Reserve University, Cleveland, 1886; aged 56; a Fellow of the American Medical Association; died suddenly in his office, April 11, from angina pectoris.

William Cammett, M.D., Portland, Me.; College of Physicians and Surgeons in the City of New York, 1879; aged 63; formerly a member of the Maine Medical Association; died at his home, April 20.

Edward Tobey Tucker, M.D., New Bedford, Mass.; Harvard Medical Society; died at his home, April 10.

Coleman L. Poynter, Eldridge, Mo. (license, Missouri, 1884); aged 86; died at his home, January 13, from pneumonia.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

[CONTRIBUTION FROM THE CHEMICAL LABORATORY OF THE AMERICAN MEDICAL ASSOCIATION]

WHEELER'S TISSUE PHOSPHATES

L. E. Warren, Ph.C., B.S.

"Wheeler's Tissue Phosphates," known also as "Compound Elixir of Phosphates and Calisaya," is advertised as a nerve food and a nutritive tonic. The label states that it contains calcium, iron, sodium trihydrogen phosphates, alkaloids of Peruvian bark with 12½ per cent. of alcohol. The preparation is sold by the T. B. Wheeler, M. D. Co., of Rouses Point, New York. According to the manufacturer, Wheeler's Tissue Phosphates

> ". . . is an *inorganic* combination of the phosphates of iron and calcium and hydrogen (phosphoric acid) together with hydrochloric acid, hydrocyanic acid, and quinine, cheerful coloring, and a delicious, cordial-like flavoring."
>
> ". . . The iron is the green, inorganic phosphate and the calcium the simple white phosphate of your early student days. . . ."

The preparation is a red liquid, having an acid reaction, a sweet-bitter taste and the odor of wild cherry. Qualitative tests indicated the presence of calcium, iron, a phosphate, a chlorid, a sulphate, quinin or cinchona alkaloids, alcohol, sodium, cochineal coloring and invert sugar. Ammonium salts, glycerol, citrates or lactates were not found. From the quantitative values obtained the preparation may be taken to represent:

Sp. gr. at 25C./25C.	1.1087
Alcohol (per cent. by volume)	11.35
	Gm. per 100 c.c.
Calcium phosphate [$Ca_3(PO_4)_2$]*	0.397
Iron phosphate ($FePO_4.4H_2O$)*	0.068
Chlorid (as hydrochloric acid)	0.407
Sodium sulphate ($Na_2SO_4.10H_2O$)	0.043
Quinin sulphate (U. S. P.)	0.041
Sodium phosphate ($Na_2HPO_4.12H_2O$)	0.065
Invert sugar	26.824
Water, cochineal and flavor to make	100 c.c.

* It should be understood that the calcium and iron salts are held in solution by the hydrochloric acid.

The dose of Wheeler's Tissue Phosphates recommended by the manufacturer is a tablespoonful or about 15 c.c. (½ oz.). The total calcium in a dose of the preparation is equivalent to about one-sixth of an average dose of the official calcium chlorid, and the total phosphate to each dose is equivalent to about one-fourth of a dose of the official diluted phosphoric acid. Each prescribed dose of the preparation contains about 0.01 gm. (2/13 grain) of iron phosphate or about one twenty-fifth of the average dose, and to obtain a Pharmacopeial dose of iron phosphate the patient would be obliged to take three-fourths of the contents of an entire bottle—or 12 ounces—of the preparation. If it be assumed that all of the chlorid present is in the form of free hydrochloric acid, each dose of the preparation contains the equivalent of about two-thirds of one Pharmacopeial dose of diluted hydrochloric acid. Each dose of the preparation contains about 0.0062 gm. (1/10 grain) of quinin sulphate, or about one-sixteenth of the average tonic dose. In other words, to obtain the amount of quinin sulphate given in the U. S. Pharmacopeia as the tonic dose, the patient would be required to swallow 7½ fluidounces of the proprietary preparation, or the contents of nearly half a bottle. The fallacy of prescribing Wheeler's Tissue Phosphates either for its quinin or its iron content is apparent.

Wheeler's Tissue Phosphates is, then, a mildly bitter, flavored syrup which contains nearly 12 per cent. of alcohol, small quantities each of calcium phosphate and hydrochloric acid and insignificant amounts of iron and quinin salts. In other words, essentially it is a sweetened solution of small quantities of calcium phosphate in very dilute hydrochlorid acid together with 12 per cent. of alcohol.

Bearing in mind the analysis of the preparation, how ludicrous some of the claims appear:

> "*Tissue Phosphates* is not a hypophosphite preparation; it is not a combination of glycerophosphates or other organic salts, or so called peptonates and manganates, all recently condemned by the best therapeutic opinion here and in Europe, as much slower and less active than the simpler salts. The iron is the green, inorganic phosphate and the calcium the simple white phosphate of your early student days. Nature takes these simple salts and builds them rapidly into lecithin, bone, and other tissue, without the delay incurred by splitting up the organic salts before she can recombine them."
>
> "Tissue phosphates is in fact a *chemical food.*"
>
> "The formula, suggested by Professor Dusart, of Paris, combines in an easily assimilable and agreeable cordial; medium medicinal doses of Phosphorus, the Generator of Nerve Force; Calcium Phosphate, for Cell Development and Nutrition; Sodium Phosphate, a stimulant of Liver and Pancreas and Corrective of Acid Fermentation in the Alimentary Canal; Iron, generating in the Blood Heat and Motion; Phosphoric Acid, Tonic in Sexual Debility; Alkaloids of Calisaya, Antimalarial and Antipyretic; Extract of Wild Cherry, Tonic, yet Calming Irritation and Diminishing Nervous Excitement; Ethyl Alcohol 12-5%; and Aromatics."

Although the claim is made that the "formula" of Wheeler's Tissue Phosphates had been "suggested by Professor Dusart," such of Dusart's papers as were available in this country[1] failed to disclose any "formula" that was at all comparable to this product.

[EDITORIAL NOTE.—The investigation verifies facts that must be obvious to every physician who has given the matter thought. "Wheeler's Tissue Phosphates" is an unscientific, shotgun mixture whose most active and powerful drug is the alcohol it contains. That it was not years ago relegated to the realms of obsolete and discarded preparations is a commentary alike on the lack of scientific discrimination and the persuasive power of advertising. While in the past "Wheeler's Tissue Phosphates" has been advertised extensively in medical journals, it seems that now the chief, if not the only beneficiary of the advertising appropriation for this product, is the *New York Medical Journal* which weekly heralds the "Delicious" and "Sustaining" qualities of "The Ideal Tonic for Fastidious Convalescents."]

Correspondence

VERTIGO AND VISION

To the Editor:—Recent work on the internal ear has been summed up in an exceedingly instructive and succinct article by I. A. Jones (The Practical Uses of Recent Work on the Internal Ear, THE JOURNAL, March 17, 1917, p. 829). He notes that the attention of the eye specialist has not been called to the intimate relation between the eye and the ear, and mentions a well known ophthalmologist who, having had the elicitation of nystagmus by Politzer inflation demonstrated to him, obviously for the first time, by an otologist, expressed his astonishment that there was such a close relation between the ear and the eye. In the same article stress is laid on the vestibular apparatus, meaning the static portions of the internal ear, and the pathways from the ear through the brain-stem, cerebellum and cerebrum, as the usual if not exclusive source of vertigo. The author deprecates the use of such qualifying or "generalizing" adjectives as gastric, cardiovascular or idiopathic, as applied to vertigo. If the clinical tests prove the vestibular apparatus to be in physiologic order, the vertigo is "functional." Vertigo is definitely a disturbance of the equilibratory apparatus, and is due to an irritation, impairment or destruction of some portion or portions of the ear or its associated pathways.

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[1] Dusart, L.: Recherches expérimentales sur le rôle physiologique et thérapeutique du phosphate de chaux, Paris, 1870; Quel est l'acide du suc gastrique? Lille, 1874, unbound, 8 pages; Notice sur l'emploi et les proprietés du lacto-phosphate de chaux, Clichy, 1868, unbound, 8 pages. Dusart and Blache: Recherches sur l'assimilation du phosphate de chaux, Paris, 1868, unbound, 15 pages.

These conclusions make a short cut across wide unexplored fields. The vertigo of anemia, of fever states, of neurasthenia and other neuroses is ignored. Even the vertigo of seasickness, classical instance, is not to be simply explained and dismissed from analysis as an irritation of the static labyrinth, for the simple reason that the irritation is minimal, that ocular, visual factors play an important rôle, and that in much more marked instances of vestibular irritation, as in carousel riding or swinging, there may be no vertigo at all. On the other hand, every ophthalmologist knows that there are types of vertigo absolutely independent of any vestibular irritation, such as the vertigo, often heightened by nausea and vomiting, of diplopia depending on ocular motor paralysis or paresis, or on such slight confusion of vision as that produced by weak prisms, incorrectly inclined cylinders, or unsuitable spherical lenses. It is a well known fact of physiologic optics that decided vertigo and nausea can be elicited by looking at a swaying mirror, and the more easily, the less evident the sway.

All these facts and many more which might be cited indicate the importance of nonvestibular, and notably visual factors in many forms of vertigo. I have already called attention to these implications (The Non-Acoustic Functions of the Labyrinth, *Tr. Am. Otol. Soc.*, 1908, **11**, 158). We may even go to the point of asserting that vertigo is definitely not a disturbance of the equilibratory apparatus but a disturbance of consciousness which may, or may not, be due to such imbalance. It is the discrepancy between the conscious or subconscious data registered by vestibular stimuli and other data derived from vision and muscle sensations that causes the well known disorder of general sensation which we call dizziness. Disturbance of actual balance may or may not cause or accompany this symptom; it is by no means essential. Conversely, complete loss of balance may take place without a sign of vertigo (Fridenberg, Percy: A Review of Some Recent Theories of the Labyrinth, *Tr. Am. Otol. Soc.*, 1908, **11**, 290). Whirling in the dance does not cause dizziness. It is the stopping that does it, with the resulting discrepancy of stimuli analogous to the pain and discomfort which, in other anatomic regions, Meltzer has characterized as contrary innervation.

The differentiation of vertigo should also be extended to the conception of nystagmus. Spontaneous nystagmus is a lame phrase intended to signify nystagmus of ocular origin. All nystagmus which is not elicited by clinical tests is, *pro tanto*, spontaneous. Ocular, or as I have preferred to call it, visual nystagmus, is almost invariably irregular, wild oscillation, as in the cases of two children with cerebral disturbance cited in the article by Jones. The character of this irregular, seeking eye motion, is an index of its origin and a clue to its interpretation (Fridenberg, Percy: The Teleology and Interpretation of Nystagmus, *Ann. Ophth.*, October, 1908). Far from being, as is vestibular nystagmus, a reaction to turning or other changes in body position, a compensatory gaze correction by accompanying and drifting fixation toward apparent, because subjectively sensed, motion in the outer world, this visual nystagmus is a groping for vision and represents a return to a more primitive form of sense perception which I have likened to the movements of tentacles on a lower level of life. Recent advance in otology has undoubtedly systematized the tests of labyrinthine function and determined by practical, clinical observations as well as by experiment the bearing of nystagmus reactions, vertigo and overpointing. The result has been of great value, as Jones points out, in the diagnosis of obscure neurologic cases with symptoms of dizziness and oculomotor imbalance, as well as in otology, syphilology and general practice. The importance of the labyrinthine tests in excluding or including the inner ear as a disease factor in loss of conjugate ocular deviation is something to which I wish to add my testimony. It may also be applied, as was first shown by the Vienna school, in cases of coma in which otherwise no determination is possible of the functioning of the external ocular muscles.

A word of warning should be spoken as to accepting without modification the hard and fast rule as to an exact number of seconds of afterturning nystagmus to be elicited by passive rotation of the patient. Von Cyon and others noted, long ago, that this reaction, as well as the kindred phenomena of dizziness, and falling sensations, depended largely on the patient's previous habits in turning, or reversing in dancing, by his being right or left handed, etc., and that they were variously modified by these.

Finally, I wish to emphasize the fact that dizziness is a much commoner symptom than is generally supposed; that in its milder forms it is an almost invariable accompaniment of ocular muscle imbalance and a concomitant of eye-strain. While this in no wise belittles the importance of otologic tests of function, it should keep us from overlooking the frequency and significance of ocular factors in vertigo.

Percy Fridenberg, M.D., New York.

COMPULSORY HEALTH INSURANCE

To the Editor:—Discussion has been invited on the compulsory health insurance bill. Dr. Lambert, in a pamphlet sent out to New York State physicians, also invites discussion. After reading Dr. Lambert's and other articles on the bill, it appears to me that there are a few fundamental questions which stand out rather prominently.

The bill which is being promoted in New York State—the Mills bill—is fostered by the American Association for Labor Legislation, the same association which secured the passage of the compensation bill. Their interest—we might say their only interest—is the welfare of the insured class. The proposed insured class is either apparently unfamiliar with this particular expression of solicitude, or with few exceptions definitely opposed to it. The American Association for Labor Legislation is concerned with the medical man only so far as he is needed in the scheme of the bill.

The insured class includes workers with incomes of $1,200 per year, and their dependents, variously estimated to be from 50 to 80 per cent. of the population of the state of New York. It does not include the large mass of *inefficient workers*—those chronically out of employment, the chronic invalids of the past years who cannot work, and those who under the act will be ill for more than twenty-six consecutive weeks. This group of persons will be continued as charity patients and will be treated by the physicians as heretofore, cheerfully without compensation. For this group of persons the Mills bill does not provide medical service, and it is this group which is most in need of medical service. They do not come under the act; consequently the physicians will not get 100 per cent. for work done, as implied in an article by Dr. Lambert.

Without question the method of payment to physicians for their work is important to the medical profession. When we stop to consider that a physician must spend from six to ten years in preparation for his profession, years of expenditure without income, we must conclude that the compensation must be in proportion to this investment, and sufficient to maintain his professional standing, in order to be adequate.

The Mills bill definitely plans to commercialize the medical profession—to commmercialize it on a very low plane. To meet this attempt, the medical profession should consider the fee question simply as a business proposition. A law which will give contract medical service to from 50 to 80 per cent. of the population of the state will have without question a widespread and profound influence on the economic status of a proportionate number of the physicians of the state.

The compensation bill affects medical practice but slightly, and that little unsatisfactorily. The health insurance bill will affect medical practice considerably; consequently the method of compensation and the amount of compensation should be definitely incorporated into the law. If the question of fees is left to the local boards, the fees adopted will probably be such as the local boards are familiar with, that is, the per capita lodge fee, which varies probably from $2 to $4 per family per year.

If the Mills bill is adopted, I cannot conceive of any other just method of payment to the physician than a method which pays the physician in direct proportion to the amount of work he is called on to perform, that is, the average normal fee per visit, payment by visitation. There is no justice in the capitation system or in the payment by points against a lump sum.

I see no reason whatsoever why the state should attempt to commandeer the highly specialized services of a group of its citizens without paying the average normal price for this service. This might make the medical expenditure of the bill high; if so, the contributions to the fund should be increased to meet this necessary expense. Physicians as a body are charitable with their time and services to the unforunate poor of their communities, but charity should not enter into a broad scheme of medical services such as is contemplated in the Mills bill. The state is making to the physicians a business proposition, and it should be considered as such.

Investigations in Germany and in England have demonstrated that the introduction of compulsory health insurance has lowered considerably the economic status of the physician. The fees in Germany and England are low—indeed, very low—and in many instances the physician in order to make a living wage must overwhelm himself with work. His work is increased, but this increase is associated with a decrease of earning power. The result is that there has been a lowering of the standard of medical practice. The practitioner has not the necessary time to devote to medical study, medical literature, medical meetings and conferences which would enable him to keep abreast with medical progress. Medical progress as exemplified in the large medical centers has no practical bearing on the state as a whole unless it can be absorbed and applied by the general practitioner. As a result of this condition of affairs, it is stated that the insured classes in Europe do not get as good service from the medical profession as they formerly did. This has been brought out especially in England. The state should consider deeply whether it should invite a similar condition of affairs here—whether or not it desires an overworked, commercialized medical profession, the members of which will be unable to give the best of themselves to their work.

Dr. Lambert estimates that under the compensation bill the physicians in the panel with their allotment of 500 families will see from twenty to thirty patients per day. That is a big day's work, if done conscientiously, and will leave the physician time for little else. What would the probable income be? Dr. Lambert does not state. Judging by the fees prevailing in Europe, an estimate of from $2,000 to $3,000 would be high. If from this amount is deducted the ordinary office and automobile expense, I fear that the average physician could qualify to come under the act, under the voluntary insurance clause.

What would be the salary of the whole time medical directors, of whom there probably will be several hundred? If the chairman of the Health Insurance Commission receives $6,500, surely the several hundred whole time medical directors could not receive a similar sum. Can the state secure the services of physicians of sufficient experience and professional standing in their communities who will give up their private practices and accept whole time employment as medical directors or referees? I think not, unless the salaries are adequate—considerably more than is the salary of the chairman of the Health Insurance Commission.

Another important phase of the question is the expense. Under the law, the state would contribute two tenths of the necessary expenditure to the fund. The New York State budget for 1917 calls for approximately $72,000,000, of which $12,000,000 is to be raised by direct taxation. It is variously estimated that the state's portion, the two tenths, would be anywhere from $25,000,000 to $40,000,000, and that the general overhead expense would be about $5,000,000. Let us assume that the lowest estimate, $25,000,000, would be sufficient, and let us concede that this amount of money could be raised without difficulty; is it desirable even then that the state should spend so much on merely palliative health measures? Consider the incalculable benefit which would accrue to the state if only a small percentage of the foregoing amount were spent for real preventive measures—for work in tuberculosis and the establishment of sanatoriums; for laboratories in the aid of diagnosis, and for the manufacture of vaccines and serums; for sanitary measures to eradicate typhoid; for the establishment of colonies for the care of our mental defectives; for educational propaganda among the masses along the lines of prevention of infectious diseases; the early diagnosis and treatment of cancer, and the disastrous effects of drugged alcoholic "patent" remedies. The chief difficulty, however, in the way of the adoption of such activities is that there is little room in them for politics and politicians, while the compulsory health insurance bill opens a new and inviting field to practical politicians.

Without question some form of health insurance, perhaps compulsory health insurance, is desirable; but a plan of compulsory health insurance without the complex scheme involving the commercializing of the medical profession would be more desirable. S. J. APPELBAUM, M.D., Rochester, N. Y.

HARVEY LABORATORY FOR RESEARCH IN BLOOD PRESSURE

To the Editor:—In the February, 1917, number of the *Medical World*, a medical monthly published in Philadelphia, there appeared an article under the title, "An Effort to Standardize Myocardial Capacity with Reference to Early Diagnosis of Tuberculosis." The article was signed Harley Stamp, M.D., Harvey Laboratory for Research in Blood Pressure, University of Pennsylvania.

I wish to call attention to the fact that there is no such laboratory at the University of Pennsylvania, and also that the name of Harley Stamp does not appear in the Directory of the American Medical Association. I believe that the title M.D. is an assumed one. Harley Stamp does hold, I am told, the degree of A.B. from the University of Pennsylvania, and he has been working in the Zoology Laboratory of the University of Pennsylvania. Carved on the walls of this laboratory are the names of a number of celebrated biologists and anatomists—among them the name of Harvey. Stamp's work was done, I believe, at a window under the name of Harvey, and this seems to be the only excuse offered for the creation of this make-believe laboratory—truly an easy way of starting a new research laboratory.

WILLIAM PEPPER, M.D., Philadelphia.
Dean, University of Pennsylvania, School of Medicine.

[COMMENT.—Harley Stamp seems to have had considerable newspaper notoriety. According to the Boston *Globe*, he was at one time dean of the American College of Neuropathy, an institution which in 1911 occupied two small rented rooms on the top floor of an old building on Broad Street, Philadelphia, the equipment of the rooms being in keeping with the rooms themselves. Notwithstanding the fact that this college had no enforced entrance standard, practically no laboratories or teaching material, the fees charged were $150 per year. In 1915, he sued the estate of a patient for $30,000 alleged to be due under a contract by which he claimed he was to receive $34,000 for two years' service in treating the patient.]

FOOD SHORTAGE: AN APPEAL TO PHYSICIANS

To the Editor:—A food shortage without precedent confronts the United States. Unless there is a change for the better, the coming winter will see prohibitive high prices and consequent suffering from lack of food. The physicians of the United States, as guardians of the public health, are vitally interested because the health and the vitality of the people are at stake. It is in the power of the physicians to help relieve the food shortage by taking the lead in teaching people how to conserve the food supply. It must not be forgotten that conservation of the food supply is just as important and just as necessary as is increased production. Physicians cannot very well increase the production of foodstuffs, but on the conservation side of the problem they can be of inestimable service to the nation.

It is generally recognized that people eat too much. As a nation we are more inclined toward "living to eat" than toward "eating to live." The physicians, better than any others, can discourage this habit of overeating.

Knowledge of what constitutes properly balanced rations is not widespread. Housewives have not yet had opportunity to absorb the information gained through scientific study of the food problem by experts in domestic science. The result is that the American dinner table contains much that is unnecessary and often lacks things which should be there. The physicians of the land can correct this. They can spread corrective propaganda among millions of people, and they will be heeded because of the position of trust they occupy in American families.

Correct dieting on the part of American people is of paramount importance as a measure to guard against the food stringency that faces us. We must stop the waste of food by learning how to maintain our health and our strength on less than we are now consuming. In a word, I mean we must begin eating to acquire a proper amount of nourishment instead of eating just to fill up. We must make a study of the nutrition in various foods and find out what will give the amount of nourishment we really need. When we have learned these things, our housewives can begin serving us with meals that will satisfy the appetite and provide us with plenty of nourishment without entailing any waste. With the waste eliminated, the food problem will be practically solved.

There is no doubt in my mind as to ability of the physicians of the nation to make themselves of prime importance in this fight to conserve the food supply. They have the necessary information and they have at their disposal the channels through which it can best be disseminated among the people of the land.

An old adage says, "Go to the busy man to get things done." Appealing to the physicians to help the food conservation movement is surely carrying out the thought in the adage. The physicians will do their "bit" for the fighting forces of the nation. We confidently expect the medical corps to outstrip their European contemporaries in solving the surgical and medical problems of the battlefield and the camp. But it is as necessary to have food as it is to have live soldiers, even in a time of war, for without food there would soon be no live soldiers.

Therefore the "bit" that the physicians can do for their country is not limited to the service they can render to the army on the battlefield. They can serve the army in binding up its wounds, and they can serve the nation by showing it how to conserve food through the intelligent use of a smaller quantity than is now being consumed.

As one familiar with the food situation, I can say that the public has not yet been sufficiently impressed either with the need for more production or with the necessity for more economical handling. This is a time when one can do things that would seem presumptuous in normal times. Under that right, I call on the physicians of the United States to interest themselves in the food conservation campaign and to do all in their power to advise the public as to the imperative need for conserving, to the greatest possible degree, the food supply of the nation.

By preventing waste now, we can avert hunger later on.

J. Ogden Armour, Chicago.

MOTILITY OF SPERMATOZOA

To the Editor:—In the Current Comment on "The Function of the Prostate" (The Journal, Feb. 17, 1917, p. 553), it is stated that "it has been noted that the spermatozoa are practically motionless while in the seminiferous tubules of the testis, but become actively motile in the vas deferens, or when mixed with prostatic secretion."

The statement that spermatozoa are motionless in the testicle and epididymis, and do not gain motion till they have left these organs, has been copied for years from one textbook into another, and will probably be repeated without investigation or challenge for some time to come, although it is incorrect.

Several years ago, while investigating the subject of sterility in both sexes, I frequently aspirated the testicle in both normal and pathologic cases, and found normal moving spermatozoa in the aspirated fluid thus obtained. I have called attention to this fact emphatically in my work on sterility published over four years ago. I do not claim any priority to the knowledge of this fact, but have frequently called attention to my surprise at the statement so frequently made that spermatozoa are motionless till they get beyond the epididymis, because Martin, many years before my book was published, stated that in his classic operation of epididymovasostomy for sterility he found live motile spermatozoa on the testicular side of the epididymis before proceeding with his anastomosis. As a matter of fact, in some of the lower animals, impregnation has been successfully performed by the injection of the pure aspirated testicular fluid into the genitals of the female.

Max Hühner, M.D., New York.

THE VINELAND EXPERIENCE WITH PINEAL GLAND EXTRACT

To the Editor:—In the *Medical Record,* May 10, 1913, in collaboration with Dr. Walter S. Cornell, I reported the results of an experiment with pineal gland extract conducted under the direction of Drs. C. L. Dana and William N. Berkeley of New York. Twenty-five children were chosen to whom the gland should be given. Each child was then paired with a control who was not given treatment but was weighed, measured and examined, as were the subjects.

Our report made at the end of two months' treatment states that (p. 42) "while the improvement was not great and indeed not great enough to be of itself very significant, it was nevertheless felt that it was sufficient to continue the experiment." The gland was therefore administered for another two months. Our conclusion at the end of our experiment, as stated on page 48 was: "On the whole, one cannot but feel that there is a distinct influence in the extract toward mental improvement. However, all such experiments are subject to so many disturbing factors that it seems necessary, in view of the slight gain recorded, that the experiment should be continued for a longer time." It was never expected that this experiment was more than a "try-out," which might show some positive results in case the gland had some powerful effect, such, for instance, as the thyroid is known to have on the cretin type, and if at the same time we were fortunate enough to include suitable types in our group.

One of the patients who made consistent improvement, both mentally and physically, and consequently seemed most likely to be a suitable case for the treatment was a little girl, aged 8 years, with a mentality of 3 when we began the experiment in August. At the close of the experiment she tested 4. This was a gain of one year in four months. Because of this result in her case she was later selected for a more elaborate experiment. This was carried on under the direction of Dr. Amos W. Peters, then biochemist in the Vineland Laboratory. Unfortunately, the details of this experiment are not on file in this department. Suffice it to say that the experiment was carried on under the most rigid scientific regulations. The child was observed, weighed, measured and tested, for a period, under her ordinary institution environment. She was then brought to the laboratory to live and given special diet, the observations being continued. After what might be called her "normal curve" was established, she was fed the pineal gland extract for about six months; then the medication was discontinued and she was again observed for another period. It is now about fifteen months since the experiment ceased entirely, and probably twenty months since the last administration of pineal gland extract. There was no marked change in her growth curve during the period of pineal administration, nor does there seem to be any after-effect as evidenced by her physical condition at the present time. Mentally there has been no change since March, 1912, at which time she tested 5. This is confirmed by the resident physician, by the teachers and attendants who report no noticeable improvement in her.

As the result of this experiment it was the opinion of Dr. Peters, as he expressed it to me, that the drug was practically inert.

There were no cases of the Mongolian type of imbecility included in the experiment with the twenty-five children.

Since the Mongolian type of imbecility is one that suggests glandular disturbance to many persons, it was thought worth while to make a crude experiment with them. Accordingly, two children were selected during the past year and given the extract, one for a full year, the other for six months. The first was a child, aged 10 years, with a mentality of 4, the second, aged 9 years, with a mentality of 3. For the first month one capsule a day was given, after that the dose was increased to two capsules a day. The results tend to confirm the previous experiment. Although mental and physical measurements were made regularly in these cases, there is no evidence of any effect of the gland. Teachers and attendants report the same experience of "no noticeable improvement."

It is thus seen that the Vineland experience, as far as it goes, is wholly negative.

Henry H Goddard, Vineland, N J.
Director, Department of Research, the Training School.

"THE 'OPEN DOOR' IN CHINA"

To the Editor.—Attention having been called to your editorial in the issue of March 31, entitled "The 'Open Door' in China" the Medical Society of South Carolina at its last meeting adopted the following resolutions and communicated them to the Department of Commerce

> "That the Medical Society of South Carolina expresses its surprise at and disapproval of 'Special Consular Report No 76' entitled 'Proprietary Medicine and Ointment Trade in China' published by the Bureau of Foreign and Domestic Commerce of the Department of Commerce", and
>
> "That this resolution be communicated to the Department of Commerce."

Henry P Wagener, M D, Charleston, S C
Secretary, Medical Society of South Carolina.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EARLY WORKERS ON ANTHRAX

To the Editor.—Please let me know whether the following men were veterinarians or physicians: Chabert, 1780, Barthelemy, 1823, Rayer, Davaine, 1849 Pollender, 1850, Delafond, 1860, Solleysel, 1664. I have given the dates approximately when they wrote. All but Solleysel were concerned in the early work on anthrax, he worked on glanders.

Mazyck P Ravenel, M.D., Columbia, Mo

Answer.—Chabert, Barthelemy, Delafond and Sollevsel were veterinarians.

Dr Pollender, a physician at Wipperfurth, Rhenish Prussia, wrote the memoir on microscopic and microchemical investigation of the blood in anthrax: "Mikroskopische und Microchemische Untersuchung des Milzbrandblutes, sowie uber Wesen und Kur des Milzbrandes" (*Vrtljschr f gerichtl u offentl Med*, 1855, 8, 103-114).

Casimir-Joseph Davaine, born at St Amand-les-Eaux in 1811, graduated from the Paris Medical Faculty with the Dissertation "De l'hematocele de la tunique vaginale" (1837), became a member of the Academie de Medecine (1868) and wrote a memoir, crowned by the Institut, entitled "De la paralysie generale ou partielle des deux nerfs de la septieme paire" (1852), but never held a public position. He wrote much on the entozoa, his principal contribution being 'Traite des entozoaires et des maladies vermineuses de l'homme et des animaux domestiques" (1860). His greatest contribution is his study of the bacteriology of anthrax: "Recherches sur la nature et la constitution anatomique de la pustule maligne" (*Compt rend Acad d sc*, 1865, 40, 1296-1299). He died at his estate at Garches (Seine-et-Oise), Oct 14, 1882.

Biographical references:

Dureau, A: *Bull sc dep du nord*, 1882, 5, 385-393, *Gaz med de Paris* 1882, Series 6, 1, 521, 533.
Laboulbene, A: *Compt rend Soc de biol* 1884, Series 8, 1, 120, *Paris med*, 1884, 1, 109, 121, *Gaz d hop*, 1882, p 959, *Med Times and Gaz*, 1882, 2, 537.

Pierre-François-Olive Rayer, born March 8, 1793, at St. Sylvain (Calvados), studied in Paris at the Ecole pratique, Hotel Dieu and Maison royale de Santé, graduated with the degree of M D in 1818, and became a member of the Académie de medecine (1823), and physician to the Bureau central des hopitaux (1824), Hopital St Antoine (1825) and Hôpital de la charite (1832). He succeeded Magendie as president of the Comite consultatif de l'hygiene publique (1843), and became consulting physician to Louis Philippe (1848) and professor of comparative medicine and dean of the Paris Faculty (1862). He died at Paris, Sept 10, 1867. His greatest works are his treatise on diseases of the kidneys (1839-1841) and the skin (1826) and his classical monograph on glanders and farcy ("De la morve et du farcin chez l'homme," Paris, 1837). He also wrote a history of the epidemic of sweating sickness of 1821 (1822), a memoir on delirium tremens (1819), a report on the origin of the Barcelona epidemic of yellow fever of 1821 (1822), and an investigation of a variety of hematuria endemic in Mauritius (1839). He became co-editor of the *Revue medicale* in 1822 and of the *Journal universelle et hebdomadaire de medecine* in 1830.

References:

Bull de l'Acad de med 1867, 32, 1107.
Gaz med de Paris, 1867, p 375.
Jour de conn med prat, 1867, 34, 401-405.
Union med, 1867, Series 3, 3, 435, 449-458.

TREATMENT OF HORDEOLUM

To the Editor.—I wish some information regarding the most recent and best treatment for hordeolum or stye. I have a nephew, aged 5, who has had at least thirty or forty styes within the past year. I have used the various methods of treatment, alteratives, syrup of iodid of iron, etc. Do you think the cause may be due to some error of refraction?

J P Brandon, M D, Essex, Mo

Answer.—Where there have been so many recurrences of styes as in this case, the causative agent is possibly a chronic blepharitis. This condition, by causing accumulation of scales and crusts on the borders of the lids, favors the multiplication of bacteria that are always present there, and which can thence readily penetrate into the orifices of the glands. The border of the lid may be swollen and this may cause occlusion of the excretory ducts of the glands. If the stye does not yield to abortive treatment (hot applications and antiseptic lotions), it should be incised. Ointment of yellow mercuric oxid is useful in the treatment of blepharitis. General tonic treatment is indicated, especially if the patient is anemic or scrofulous. In this particular case it would probably be wise to put the eyes thoroughly under the influence of a cycloplegic, and determine the absolute refraction.

FROSTILLA

To the Editor.—Please give me the composition of the "patent medicine" known as "Frostilla," a lotion for chapped hands. Please omit name.

K

Answer.—The only reference we find is in "Secret Nostrums and Systems," quoting from the *Druggists Circular*.

Quince seeds	60 grains
Hot water	21 ounces
Glycerin	6 ounces
Deodorized alcohol	5 ounces

"Place the quince seeds in a bottle, pour the hot water on them and agitate occasionally until a mucilage is formed; then strain through muslin. To this add the glycerin and shake thoroughly. Dissolve the desired perfume in the alcohol and add the solution to the mucilage and agitate briskly until of a uniform consistency."

VALUE OF ACTINIC LIGHT RAYS IN DERMATOLOGY

To the Editor.—Will you kindly favor me with your opinion of the therapeutic value of actinic light rays, particularly in dermatology, as produced by the "Hereaus Quartz Light" apparatus, made by the Hanovia Chemical and Manufacturing Company, Newark, N J? I contemplate purchasing one of these machines, but as they are rather expensive, and the claims of the manufacturers are rather extravagant, I should like to have a disinterested and competent opinion.

Z Fuller, M D, Sac City, Iowa

Answer.—The quartz light apparatus made by the Hanovia Chemical Company is a bona fide ultraviolet ray apparatus. It has some useful functions in dermatology. It is valuable in a few dermatoses, but, according to experience, its usefulness is limited and a very great deal more restricted than the claims of its makers would indicate.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

ARKANSAS: Little Rock, May 8-9. Sec., Dr. T. J. Stout, Brinkley, Ark.

ARKANSAS, ECLECTIC: Little Rock, May 8. Sec., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

ARKANSAS, HOMEOPATHIC: Little Rock, May 8. Sec., Dr. Scott C. Runnels, Little Rock.

GEORGIA: Atlanta and Augusta, May 31-June 2. Sec., Dr. C. T. Nolan, Marietta.

HAWAII: Honolulu, May 7-10. Chairman, Dr. K. W. Benz, 1141 Alakea St.

ILLINOIS: Chicago, June 14-16. Sec., Dr. C. St. Clair Drake, Springfield.

LOUISIANA: New Orleans, June 7-9. Sec., Dr. J. A. Henderson, 921 Canal St., New Orleans.

MASSACHUSETTS: Boston, May 8-10. Sec., Dr. Walter P. Bowers, Room 501, No. 1 Beacon St., Boston.

MICHIGAN: Ann Arbor, June 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

MINNESOTA: Minneapolis, June 5-8. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.

NEVADA: Carson City, May 7. Sec., Dr. S. L. Lee, Carson City.

NEW YORK: Albany, Buffalo, New York, and Syracuse, May 22-25. Sec., W. J. Denno, Education Bldg., Albany.

OHIO: Columbus, June 11-14. Sec., Dr. George H. Matson, State House, Columbus.

OREGON: Portland, June 5. Sec., Dr. Herbert S. Nichols, Corbett Bldg., Portland.

SOUTH CAROLINA: Columbia, June 12. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

TENNESSEE: Knoxville, Memphis and Nashville, June 15-16. Sec., Dr. A. B. De Loach, Scimitar Bldg., Memphis.

California January Report

Dr. Charles B. Pinkham, secretary of the Board of Medical Examiners of the State of California, reports that at the examination held at Sacramento, Jan. 9-10, 1917, 43 candidates were licensed through reciprocity, 3 were granted drugless practitioner's license, including 1 osteopath, and 1 was granted a license under a special exemption clause. The following colleges were represented:

College — LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett College of Eclectic Medicine and Surgery	(1907)	Illinois
College of Physicians and Surgeons, Chicago	(1898)	Nebraska
(1898) (1902)	(1908)	Washington
	(1905)	Illinois
Hahnemann Med. Coll. and Hosp. of Chicago	(1893)	Colorado
(1905)	(1914)	Illinois
Hering Medical College	(1906)	Illinois
Northwestern University (1908)	(1913)	Illinois
Rush Medical College (1882) Nebraska;	(1904)	Illinois
Indiana University (1910)	(1911)	Indiana
State University of Iowa College of Medicine	(1884)	Iowa
	(1902)	N. Dakota
Kentucky School of Medicine	(1888)	Alabama
Johns Hopkins University	(1912)	Maryland
University of Michigan Medical School (1879)	(1912)	Michigan
(1892) Montana;	(1904)	Washington
University of Minnesota (1900) Minnesota;	(1903)	Washington
Central Medical College of St. Joseph	(1895)	Colorado
Kansas City Medical College	(1905)	Washington
Medico-Chirurgical College of Kansas City	(1903)	Arizona
National University of Arts and Sciences	(1915)	Missouri
St. Louis College of Physicians and Surgeons	(1906)	Penna.
	(1913)	Missouri
New York Homeopathic Medical College and Hospital	(1905)	New York
New York Medical College and Hospital for Women	(1885)	Mass.
Eclectic Medical College	(1906)	Texas
Ohio Medical University	(1895)	Ohio
University of Wooster	(1875)	Nebraska
Western Reserve University	(1911)	Ohio
Jefferson Medical College of Philadelphia	(1902)	Penna
	(1908)	Dist. Colum.
University of Pennsylvania	(1908)	New Jersey
University of Vermont	(1903)	New Hamp.
Shunu Med. Coll., Kumamota*	(1894)	Hawaii

College — LICENSED UNDER SPECIAL EXEMPTION CLAUSE — PASSED	Year Grad.	Total No. Licensed
Bellevue Hospital Medical College	(1898)	1

* No such medical college named on official list of Japanese Medical Colleges. See THE JOURNAL A. M. A., Sept. 4, 1915, p. 897.

North Dakota January Report

Dr. George M. Williamson, secretary of the North Dakota State Board of Medical Examiners, reports the oral, practical and written examination held at Grand Forks, Jan. 2-5, 1917. The total number of subjects examined in was 13; total number of questions asked, 110; percentage required to pass, 75. The total number of candidates examined was 4, all of whom passed. Eleven candidate were licensed through reciprocity. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent.
Rush Medical College	(1915)	90
University of Illinois	(1916)	76.4
Long Island College Hospital	(1910)	75.1
Manitoba Medical College	(1915)	75

College — LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Chicago College of Medicine and Surgery	(1908)	Illinois
Rush Medical College	(1914)	Illinois
University of Illinois	(1915)	Minnesota
Fort Wayne College of Medicine	(1898)	Minnesota
University of Minnesota (1903) (1913) (1914)	(1915, 2)	Minnesota
St. Louis University	(1910)	Illinois
University of Christiania	(1912)	Minnesota

Pennsylvania January Report

Mr. N. C. Schaeffer, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports the written examination held at Philadelphia, Jan. 9-11, 1917. The total number of subjects examined in was 5; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 71, of whom 66 passed and 5 failed. The following colleges were represented:

College — PASSED	Year Grad.	Total No. Licensed
University of Louisville	(1911)	1
College of Physicians and Surgeons, Baltimore (1914)	(1915)	2
Eastern University	(1913)	1
Johns Hopkins University	(1914)	1
University of Maryland	(1915)	1
Columbia University	(1912)	1
New York Homeopathic Med. Coll. and Flower Hosp.	(1915)	1
University of Buffalo (1913)	(1914)	2
Eclectic Medical College	(1915)	2
Western Reserve University	(1915)	1
Jefferson Med. Coll. of Philadelphia (1914, 7)	(1915, 15)	22
Medico-Chirurgical Coll. of Phila. (1914, 1)	(1915, 14)	15
Temple University (1914)	(1915, 5)	6
University of Pennsylvania (1913) (1914, 2)	(1915, 3)	6
University of Pittsburgh	(1915)	1
Woman's Medical College of Pennsylvania	(1915)	2
Medical College of Virginia	(1915)	1
FAILED		
College of Physicians and Surgeons, Baltimore	(1915)	69.2
Maryland Medical College	(1912)	52, 70.8
Jefferson Medical College of Philadelphia	(1915)	71.4
Medico-Chirurgical College of Philadelphia	(1915)	71.8

Wisconsin January Report

Dr. John M. Dodd, secretary of the Wisconsin State Board of Medical Examiners, reports the practical and written examination held at Madison, Jan. 9-10, 1917. The total number of subjects examined in was 24; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 7, of whom 5 passed, including 2 osteopaths, and 2 failed. Five candidates were licensed through reciprocity and two candidates were granted reregistration licenses. The following colleges were represented:

College — PASSED	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1914)	79.6
	(1915)	77.2
Rush Medical College	(1915)	91.2
FAILED		
Bennett Medical College	(1915)	71.5
Chicago College of Medicine and Surgery	(1915)	69.5

College — LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Bennett Medical College	(1913)	Illinois
State University of Iowa College of Medicine	(1905)	Iowa
University of Minnesota	(1907)	Minnesota
St. Louis University	(1912)	Missouri
University of Pennsylvania	(1907)	Illinois

Hawaii January Report

Dr. K. B. Porter, secretary of the Hawaiian Territorial Board of Health, reports that the following candidates were licensed at the examination held Jan. 8-11, 1917.

College — PASSED	Year Grad.	Total No. Licensed
Rush Medical College	(1905)	1
Harvard University	(1914)	1
Aichi Prefecture, Special Medical School	(1914)	1

Social Medicine, Medical Economics and Miscellany

INSANITY IN THE PHILIPPINES

A. P. GOFF, M.D.
Chief, San Lazaro Hospital, *Philippine Health Service*
Manila, P. I.

About 4,500 insane are reported at present in the Philippine Islands, distributed thus by provinces: Bohol, 463; Cebu, 343; Pangasinan, 270; Tayabas, 227; Leyte, 167; Oriental Negres, 163; Ilocos Sur, 146; Iloilo, 142, and so on down to Isabela with only 3. About 800 are cared for in institutions for the insane.

According to race there are seven Americans, fifteen Europeans, and thirteen Chinese and miscellaneous, all the others being Filipinos; 2,700 are male, and 1,800 female.

An analysis made recently of 650 deaths and discharges from hospital gave about the results shown in Table 1. The mention of "cures" among alcoholics and opium users means, of course, only that the patients left the hospital in good condition, and, temporarily at least, free from the habit. Practically all of the alcoholics were Caucasians.

TABLE 1.—DIAGNOSES IN SIX HUNDRED AND FIFTY CASES

Diagnosis	Cured	Improved	Unchanged	Died	Total
Mania, manic-depressive insanity etc.	63	111	28	43	245
Dementia, feeblemindedness, etc.	0	30	13	88	131
Melancholia	13	25	2	7	47
Paranoia	0	0	4	0	4
Epilepsy	0	0	3	0	3
Observation and miscellaneous	1	1	23	3	28
Opium habit	27	0	0	0	27
Alcoholism	161	0	0	4	165
Total	265	167	73	145	650

A series of 358 insane in the hospital were found to be suffering from the different forms of mental trouble shown in Table 2.

TABLE 2.—FORMS OF MENTAL TROUBLE

Diagnosis	Male	Female
Melancholia-mania, manic-depressive insanity	140	32
Dementia praecox, paranoia, paranoid forms	110	28
Epileptic insanity	16	1
Alcoholic insanity	7	0
Senile dementia	3	2
Opium habit	2	0
Miscellaneous and unclassified	15	2
Total	293	65

It may be seen from these tables that the forms of mental diseases in the Philippine Islands do not differ essentially from those in the United States or other countries, as regards either classification or numbers in each division.

If we place the number of inhabitants in the Philippine Islands at about 8.000,000, it will be seen that the proportion of insane is about 1:1,800, or only about 562 to 1,000,000 of population; whereas the United States and Great Britain have over 3,000 per million, including both insane and idiots. It should be remembered, however, that the number of insane usually increases in proportion with the completeness of statistics.

At present those under institutional care in the Philippine Islands include the criminal insane and the more violent cases. It is hoped that shortly a new pavilion for the milder cases will be erected at San Lazaro.

The condition of the insane has improved greatly during the last fifteen years, not only as regards the number treated in institutions and otherwise, but also as to the general attitude adopted by relatives and friends. The common superstitious beliefs regarding the insane are well known; but it is only rarely at this time that these patients are regarded as other than sick persons and treated accordingly. Those in the hospital do a good deal of work in the garden and around the grounds, and also along industrial lines, making such articles as slippers, belts, baskets, mats, and clothing for themselves and other patients.

Insane Filipinos are comparatively docile and easily handled, much more so than an equal number of Caucasian insane, as they are not as strong physically, and perhaps not of as aggressive a diposition in general. It is naturally less difficult to care for the mentally afflicted here than in the United States, as the question of heating requires no attention, and ventilation almost takes care of itself, all buildings being made as open as possible. Clothing is also much simpler, and necessary bedding not nearly so abundant or elaborate.

There are only two asylums for the insane in the Philippines, both in Manila; they are the Hospicio de San José, a church institution, with a branch in Cavite, and San Lazaro Hospital, which is the regular government insane asylum, also being the officially designated institution for reception of criminal insane. It is obvious that more accommodation for the insane is needed, and it will without doubt be furnished in the near future.

Fixing Nitrogen

John E. Bucher of Brown University in a recent address before the Institute of Chemical Engineers advanced some new ideas for the fixation of nitrogen. This means getting nitrogen from the air into chemical combination so that it may be used for the production of chemicals, dyestuffs, explosives, fertilizers, and generally in chemical industry. Methods have been devised, but have hitherto been expensive and complicated. Bucher has discovered that nitrogen will combine with an alkali and carbon in the presence of iron as a catalyst and produce the cyanid of the alkali. From the mixing of soda ash with either powdered iron or iron ore and powdered coke and heating in an ordinary furnace with a stream of air through the furnace, sodium cyanid results, with the iron uncombined. No electric power is needed, no costly materials, and no expensive special apparatus. When the sodium cyanid is treated with steam, sodium bicarbonate and ammonia result, and in the latter the chemist has the fixed nitrogen from which he can make fertilizer or some other product containing nitrogen. By introducing into a solution of the sodium cyanid waste gas from the furnace containing carbon dioxid, urea is produced, which is three times as rich in nitrogen as sodium nitrate and twice as rich as ammonium sulphate, both of which are used as fertilizer and play an important rôle in food production. Sodium cyanid when treated with an electric current separates into metallic sodium and cyanogen. There is a large demand for the former in chemical industry, and the latter is rapidly absorbed by hydrochloric acid and becomes oxamid, which contains nearly one-third nitrogen, and on account of its slow solubility in the soil, should, it is said, make an ideal fertilizer. Heretofore urea and oxamid have been too expensive for use as fertilizers, but Bucher's ideas open up great possibilities in this line, as well as in others requiring the employment of nitrogen.

A Case of Quintuplets

W. Martin reports, in the *British Medical Journal*, March 17, 1917, the case of a woman, aged 39, who bore five babies in one labor. The woman was one of a family of eight children, with no history of multiple pregnancies, except that a sister had twins once. The husband was one of a family of six with no history of multiple pregnancies. The labor began at 9 p. m. and terminated with the birth of the fifth child at 3:48 the next morning. A quarter of an hour later the placenta was delivered, which was in one large mass, with five separate sacs, each of which presented in succession during the labor and was ruptured by Martin. The children were well formed, about 8 to 12 inches in length, and were all born alive. Four were boys. They lived for periods varying from one and a half to twenty-eight hours. The amount of liquor amnii was enormous. The mother had a normal puerperium. The labor took place in the eighth month and it was her eighth pregnancy. All of the other children were living.

Medicolegal

Duty of Employers to Furnish First Aid as Well as Surgical Assistance

(Hunicke vs. Meramec Quarry Co. (Mo.), 189 S. W. R. 1167)

The Supreme Court of Missouri, Division No. 1, in reversing a judgment that was rendered in favor of the defendant, says that this action was brought to recover damages for the death of an employee (who had been most grievously injured while in the service of the defendant) through the alleged negligence of the latter in not furnishing him with prompt emergency or first aid assistance and surgical assistance on that occasion. There was but one legal proposition presented by the record for determination, and that was with reference to the correctness of a ruling refusing an instruction to the jury, asked by counsel for the plaintiff, and the giving in lieu thereof, for the plaintiff, of a somewhat different instruction, and the giving of one in harmony therewith for the defendant. The only material difference between the instruction asked by the plaintiff and those given by the court for the plaintiff and the defendant was that the former told the jury (1) that it was the duty of the defendant to render to the injured employee such emergency or "first aid" assistance as was reasonably possible under the circumstances in order to stop the flow of blood, and also (2) that it was the duty of the defendant to furnish him with such medical and surgical assistance as was reasonably possible under the circumstances, while the instructions given for the plaintiff and the defendant eliminated the first duty mentioned, and submitted only the second to the jury. That action of the trial court was clearly erroneous. It was clearly erroneous to instruct the jury that if they believed and found from the evidence that after the employee was injured the defendant exercised ordinary care to secure for him surgical and medical treatment at the hands of competent physicians and surgeons, then the defendant fully discharged its duty toward said employee, and was not liable to the plaintiff in this case.

Not Unlawful Grant to American Medical Association Restriction on Osteopaths

(State vs. Bonham (Wash.), 161 Pac. R. 377)

The Supreme Court of Washington affirms a judgment of conviction of the defendant of the crime of practicing medicine and surgery without a certificate from the board of medical examiners authorizing him so to do, although he held a certificate from the board to practice osteopathy. The court says that, first of all, the constitutionality of the statute was attacked. In the language of counsel: "When the legislature of 1909 incorporated in Section 8391 of the act the following language: 'In order to procure a certificate to practice medicine and surgery the applicant for such certificate must file with said board, at least two weeks prior to the regular meeting thereof, satisfactory testimonials of good moral character, and a diploma issued by some legally chartered medical school, the requirements of which shall have been at the time of granting such diploma in no particular less than those prescribed by the Association of American Colleges for that year,' they granted to the American Medical Association, a nonlegislative body outside of the state, legislative functions, and by so doing aimed to establish a medical hierarchy, which would control the people from birth to death. The bureaucratic rule which it hoped to secure by the passage of that section is un-American in principle and despotic in spirit. It is monopolistic and tyrannical in the most offensive sense of those terms." But the court thinks it manifest that the clause quoted by counsel cannot bear the construction he placed on it. By this clause the legislature granted legislative functions to no one. It simply defined the medical schools from which an applicant to practice medicine and surgery in the state must produce a diploma before a certificate authorizing him to do so can be issued to him. The restriction may or may not be a wise one, but this is a question for the legislature and not for the courts. With the courts the question is one of the power of the legislature to impose the restriction, and this court sees no reason to question it. Again, the court thinks the restriction was not one of which the appellant (defendant) could be heard to complain. He was in no manner affected by it. He applied for and received a certificate to practice osteopathy, and was entitled to practice that profession in the manner and to the extent the certificate permitted. His second contention was that his certificate entitled him to employ for the treatment of diseased tonsils the methods employed by him in the treatment of the diseased tonsils of the patient mentioned in the information, which apparently were by administering an anesthetic (ether), placing a snare around each of the tonsils and cutting them out with a knife, in addition to which stypticin was administered. But the court holds that his right was to practice osteopathy as that practice was understood at the time the medical act was adopted, and this it concludes did not sanction the practice resorted to by him in the treatment of said patient. A perusal of the successive catalogues of the schools of osteopathy will show that their teachings are gradually being expanded, and that the more modern of them now teach in some degree much that is taught in the older schools of medicine. The parent school has been more marked in this respect than perhaps any of them. It now teaches that in "childbirth lacerations," in "certain types of congenital deformities, certain kinds of tumors, etc., surgery must step in," and that surgery must be resorted to for the removal of tissues so badly diseased or degenerated that regeneration is impossible by the process of adjustment. But this advance is modern. It was not in vogue even so late as 1909, the time of the enactment of the medical act. The framers of the latter, the court thinks, regarded the practice of medicine and surgery and the practice of osteopathy as separate and distinct methods of treating the sick and afflicted, and intended to confine the practitioners of each to the particular system he professed to practice; in other words, to the system in which he had been educated. That no definition of these terms was offered in the statute would only mean that the terms were used in their general and accepted sense, in the sense in which they were commonly understood at the time of the enactment of the statute.

Society Proceedings

COMING MEETINGS

American Medical Association, New York, June 4-8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am. Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 21-23.
Am. Climatological and Clin. Association, Lakewood, N. J., May 29-31.
American Dermatological Association, Cincinnati, May 24-26.
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28-30.
Am. Laryn., Rhin. and Otol. Society, Niagara Falls, Can., June 1-2.
Am. Medico-Psychological Association, New York, May 29-June 1.
American Neurological Association, Boston, May 21-23.
Am. Ophthalmological Society, Virginia Hot Springs, May 29-30.
American Orthopedic Association, Pittsburgh, May 31-June 1.
American Otological Society, Atlantic City, May 29-30.
American Pediatric Society, White Sulphur Springs, May 28-30.
American Proctologic Society, New York, June 4-5.
American Psychopathological Association, Boston, May 24.
American Radium Society, New York, June 4.
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31-June 2.
American Therapeutic Society, New York, June 1-2.
Conference of State & Prov. Bds. of N. Amer., Washington, May 30-31.
Connecticut State Medical Society, New Haven, May 23-24.
Florida Medical Association, Atlantic Beach, May 18-19.
Illinois State Medical Society, Bloomington, May 8-10.
Iowa State Medical Society, Des Moines, May 9-11.
Maine Medical Association, Portland, June 12-13.
Massachusetts Medical Society, Boston, June 12-13.
Mississippi State Medical Association, Jackson, May 8-9.
Missouri State Medical Association, Springfield, May 14-16.
National Assn. for the Study of Epilepsy, Skillman, N. J., May 28-29.
Nat. Assn. for Study and Prev. of Tuberculosis, Cincinnati, May 9-11.
Nebraska State Medical Association, Lincoln, May 8-10.
New Hampshire Medical Society, Concord, May 16.
North Dakota State Medical Association, New Rockford, May 9-10.
Ohio State Medical Association, Springfield, May 14-16.
Oklahoma State Medical Assn., Lawton-Medicine Park, May 8-10.
Oregon State Medical Association, Portland, June 28-30.
South Dakota State Medical Association, Yankton, May 28-30.
Texas State Medical Association, Dallas, May 8-10.
Washington State Medical Association, Spokane, June 17-19.
Wyoming State Medical Society, Douglas, May 9.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Boston Medical and Surgical Journal

April 12, CLXXVI, No. 15

1 Scholarship in Medicine. W. S. Thayer, Baltimore.—p. 519.
2 *Renal Calculus. G. G. Smith, Boston.—p. 524.
3 Disease Incidence in China. C. A. Hedblom, Rochester, Minn.—p. 530.
4 Lipoma of Intestine. A. H. Harrigan, New York.—p. 535.
5 Contribution to Vegetative Neurology; Touching on Heart Action, Status Lymphaticus and So-Called Vagatonia and Sympathicatonia. E. A. Tracy, Boston.—p. 538.
6 *Cause of Poliomyelitis. H. Greeley, Brooklyn.—p. 540.
7 *Nail Puncture Wounds of Foot; Results in One Hundred Cases. W. I. Clark, Worcester.—p. 541.

2. **Renal Calculus.**—In looking up the records of the thirty-four cases in which analyses of the stones were recorded, Smith found that five out of the thirty-four were bilateral. In three of these five, the disease was recurrent as well. There were no recurrent unilateral stones. In three of the five cases, the stones were practically pure phosphate stones. In the other two, the stones were composed fairly equally of phosphates and oxalates. Of sixteen cases with calcium oxalate stones, none was recurrent. It would seem, therefore, that the phosphatic stones are the ones to be dreaded, and that if dietetic measures will be of any help, they should be tried. The urine should be kept very dilute by the ingestion of much water. In addition to this, the ingestion and absorption of phosphates must be diminished. If the intake of calcium is also diminished, phosphates will be excreted as salts of sodium and potassium, which are soluble. To prevent the recurrence of phosphatic stone, one should drink freely of water, take a teaspoonful of calcium carbonate with or after meals, and avoid eggs, milk, fish and fruits. To prevent uric acid deposition, avoid highly acid urine. Eat chiefly of vegetables, fats and carbohydrates. Eat a low protein diet of purin free nature. Avoid asparagus, liver, sweetbread, kidneys, meat extracts and malt liquors, claret, etc.

6. **Cause of Poliomyelitis.**—Greeley compared the bacillus isolated by him with the "streptococcus-like" organism described by Rosenow and found them to correspond serologically and culturally. The accidental installation of a drop of a fluid culture into the eye caused an abortive attack in an experimenter and the organism was recovered in scrapings from his throat, and a suspension of the same caused paralysis in a rabbit, and, when inoculated into a guinea-pig, intraperitoneally, death within a week, with spinal cord congestion and cerebral engorgement and hemorrhage, the organism being recovered from the brain tissue. From contact (same cage) with the latter, two guinea-pigs and a young rabbit contracted the infection and died, showing the same lesions and organism. In a series of serum reactions (not yet published) in which the blood serum of animals, immunized to cultures (from cord tissue) from particular cases of human poliomyelitis, and blood from fifty cases of the recent epidemic were tested against particular cultures (including the one received from Rosenow and from distemper in dogs) evidence has been obtained indicating the existence of different strains of the organism and its intimate relationship to the organism of dog distemper. The behavior of various cultures also tends to confirm this idea, although it is not yet apparent whether these differences are as fixed as in the case of the organisms of the colon typhoid group.

7. **Nail Puncture Wounds of Foot.**—This paper represents work done at Norton Company Hospital during the year 1916. In all cases the technic was the same, though the treatment was administered by different physicians and nurses. The work having been done on employees covered by insurance, it has been possible to get accurate data on the exact duration of disability for work from the insurance company, while the hospital records give the number of dressings needed by each patient. Clark says that nail puncture wounds of the sole of the foot are not dangerous and seldom cause infection if promptly treated, when caused by clean nails projecting from a board, as occurring in the building trade and general construction. This type of wound does not produce tetanus, except possibly in very rare instances. A simple and effective method of sterilization of the puncture wound may be obtained by injecting the wound with pure tincture of iodin. These injuries, contrary to general belief, produce very little disability and require few dressings. Prompt treatment is essential in order to get the best results.

Georgia Medical Association Journal, Augusta

April, VI, No. 12

8 Use of Autogenous Vaccines. A. H. Bunce, Atlanta.—p. 241.
9 Diagnosis and Removal of Foreign Bodies from Trachea, Bronchi and Esophagus. C. L. Pennington, Macon.—p. 246.
10 First Aid in Contused and Lacerated Wounds. A. G. Little, Valdosta.—p. 248.
11 Subcutaneous Emphysema in Child. Foreign Body in Bronchi; Report of Case. H. C. Whelchel, Douglas.—p. 249.
12 Case of Tetanus Successfully Treated with Tetanus Antitoxin. F. Bird, Valdosta.—p. 250.
13 Tetanus. S. L. Vincent, Nichols.—p. 253.
14 Burns and Their Treatment; Report of Case of Phosphorus Burn. R. C. Dodson, Waycross.—p. 254.

Journal of Abnormal Psychology, Boston

February-March, XI, No. 6

15 Manic Depressive Attack Presenting Reversion to Infantilism. R. Reed, Cincinnati.—p. 359.
16 Genesis of Paranoic State. T. H. Haines, Cleveland.—p. 368.
17 Genetic Antecedents of Free Association Materials. C. S. Yoakum and M. C. Hill, Galveston, Texas.—p. 396.

Journal-Lancet, Minneapolis

April 1, XXXVII, No. 7

18 Spinal Fluid in Diagnosis, Prognosis and Treatment of Cerebrospinal Syphilis. C. R. Ball, St. Paul.—p. 209.
19 *Fractures and Dislocations of Semilunar Cartilages. F. F. Griebenow, Bismarck, N. D.—p. 214.
20 Syphilis in State of Minnesota. H. G. Irvine, Minneapolis.—p. 218.
21 School Nurse. M. A. Baker, La Moure, N. D.—p. 224.
22 Blood Agglutination; Methods and Certain Experimental Considerations. J. R. Turner, Tacoma, Wash.—p. 230.

April 15, No. 8

23 Internal Secretion of Ovary. J. L. Rothrock, St. Paul.—p. 249.
24 *Case of Systemic Blastomycosis, with Stomach as Possible Port of Entry. W. F. Sihler, T. A. Peppard, Devils Lake and J. W. Cox, University, N. D.—p. 253.
25 Pathology and Etiology of Goiter. A. Schwyzer, St. Paul.—p. 258.
26 Recent Developments in Rhinology and Laryngology. F. C. Todd, Minneapolis.—p. 263.
27 Mineral Springs Sanatorium and Medical Profession of Goodhue County. R. Bosworth, St. Paul.—p. 270.
28 Case of Pernicious Vomiting in Pregnancy. W. J. Cochrane. Lake City.—p. 273.

19. **Fractures and Dislocations of Semilunar Cartilages.**—Ten cases are reported by Griebenow. They were all injuries of the internal semilunar cartilages; five were fractures and five were displacements. The operations consisted of partial extirpation in seven cases, complete extirpation in two cases, and suturing in one case. All patients reported very satisfactory results with the exception of the one in which suturing alone was done. The fact that this patient had the poorest results, Griebenow says, is an argument for radical extirpation of the damaged cartilage. The best treatment is unquestiontionably the radical extirpation, but in a few early cases a cure or improvement for a time can be accomplished by immobilizing the joint for a number of weeks or months with plaster casts and rest in bed. Reduction should always be attempted by flexing the knee, and, in case of loose internal cartilage, rotating the tibia outward while pressing over the cartilage and then quickly rotating the leg inward with a sudden extension. In cases in which there is a posterior displacement, a fracture, or a dislocation deep in the joint, complete extirpation alone can give permanent cure.

24. **Blastomycosis, with Stomach as Possible Port of Entry.**—A case of systemic blastomycosis is described by the authors which was peculiar in that it lacked the cutaneous and subcutaneous lesions which have been quite constant in the other reported cases, and which have led to a diagnosis. It is said to be the first reported case having recurrent ascites as a finding. A stomach ulcer with the localization of the blastomycetes in the stomach wall suggest this as a portal of entry. Blastomycetes were found in the stomach wall,

liver, lymph node, urinary bladder wall, omentum, appendix and ascitic fluid; budding forms were within and without endothelial leukocytes.

Medical Record, New York

April 14, XCI, No. 15

29 Some of Commoner Deviations from Ordinary Met with in Examination of Heart of Supposedly Normal Individuals. W. S. Thayer, Baltimore.—p. 617.
30 Endocrine Neurasthenia. T. A. Williams, Washington, D. C.—p. 623.
31 Recurrence After Thyroid Operations. S. P. Beebe, New York.—p. 627.
32 Ether Hypnosis in Psychotherapy. F. R. Starkey, Detroit.—p. 631.
33 Gas Gangrene; Report of Two Cases. C. W. Roberts, Atlanta, Ga.—p. 632.
34 Importance of Roentgen-Ray Diagnosis in Dentistry. A. M. Nodine, New York.—p. 634.

Nebraska State Medical Journal, Norfolk

March, II, No. 3

35 Etiology and Pathology of Lobar Pneumonia. A. Sachs, Omaha.—p. 251.
36 Treatment of Pneumonia. E. L. Bridges, Omaha.—p. 254.
37 Chronic Alveolar Abscess as Source of Systemic Disease. W. L. Shearer, Omaha.—p. 258.
38 Roentgen Treatment of Uterine Hemorrhage. E. W. Rowe, Lincoln.—p. 261.

Northwest Medicine, Seattle

April, XVI, No. 4

39 Tuberculosis of Cecum; Report of Case. C. W. Sharples, Seattle.—p. 97.
40 *Volvulus; Report of Cases. R. E. McKechnie, Vancouver, B. C.—p. 101.
41 *Syphilis of Stomach; Report of Case. P. Rockey, Portland, Ore.—p. 103.
42 Stomach Operations in Aged. J. B. Eagleson, Seattle.—p. 106.
43 Gallbladder Disease. O. F. Lamson, Seattle.—p. 108.
44 *Osteoplastic Closure of Trifacial Foramina; Report of Cases. G. M. Horton, Seattle.—p. 112.
45 Check Ligament Operation for Recurrent Dislocations of Shoulder. E. A. Rich, Tacoma.—p. 114.
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Ohio State Medical Journal, Columbus

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49 Early Diagnosis of Pulmonary Tuberculosis. J. Harris, Mt. Vernon.—p. 229.
50 Significance of Diazo and Urochromogen Reactions in Pulmonary Tuberculosis. S. A. Douglass, Mt. Vernon.—p. 231.
51 Postoperative Ileus. G. Goodhue, Dayton.—p. 233.
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54 Appendix. Résumé of Original Research. C. C. Waller, Warren.—p. 240.
55 Sydenham's Chorea with Special Reference to Treatment. C. F. Daniel, and G. L. Lambright, Tiffin.—p. 243.

Philippine Journal of Science, Manila

July, 1916, XI, Sec. B, No. 4

56 Relation Between Amount of Cholera Culture Injected into Gallbladder and State of Cholera Carriers in Experimental Animals. O. Schobl, Manila.—p. 153.
57 Influence of Bile on Duration of State of Cholera Carriers in Experimental Animals. O. Schobl, Manila.—p. 157.
58 Carbohydrate Fermentation by Bacillus Pestis, Comparing Certain American and Oriental Strains. H. W. Wade, Manila.—p. 159.

Southern Medical Journal, Birmingham, Ala.

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59 *Transmissibility of Pellagra—Experimental Attempts at Transmission to Human Subject. J. Goldberger, Washington, D. C.—p. 277.
60 *Pellagrous Intestine and Some of Its Parasites. K. M. Lynch, Charleston, S. C.—p. 286.
61 Is Average Physician Making Satisfactory Progress in Earlier Diagnosis of Pulmonary Tuberculosis? J. H. Way, Waynesville, N. C.—p. 291.
62 Cardiac Efficiency in Relation to Cardiovascular Renal Disease. J. S. McLester, Birmingham.—p. 295.
63 *Prognosis in Cardiovascular Renal Disease. G. Dock, St. Louis.—p. 298.
64 *Tuberculosis, Disease of Children. F. C. Moor, Tallahassee, Fla.—p. 300.
65 Plea and Plan for Eradication of Malaria. F. L. Hoffman, Newark, N. J.—p. 309.
66 Infantile Paralysis. W. A. Evans, Chicago.—p. 311.
67 Wassermann Test in Public Health Work. F. A. Coward, Columbia, S. C.—p. 320.
68 Cases of Gallstone, Goiter and Duodenal Ulcer. S. McGuire, Richmond, Va.—p. 324.
69 Hyperflexion (Jones) Treatment of Fractures of Elbow. D. Eve, Nashville, Tenn.—p. 327.
70 Bone Graft in Surgery. F. G. Hodgson, Atlanta, Ga.—p. 331.
71 Some Medicolegal Difficulties Met with by Railway Surgeon. J. L. Jelks, Memphis, Tenn.—p. 334.
72 Resuscitation of New-Born. R. W. Faulk, Monroe, La.—p. 337.

73 Cataract. E. C. Ellett, Memphis, Tenn.—p. 342.
74 Tonsil and Adenoid Clinic. M. M. Cullom, Nashville, Tenn.—p. 344.
75 Some Interesting Conditions Seen in Eye of Negro. C. W. Kollock, Charleston, S. C.—p. 345.
76 Modern Plague. T. W. Davis, Winston-Salem, N. C.—p. 350.
77 Hay Fever and Its Prevention in Southern States. W. Scheppegrell, New Orleans.—p. 356.

59. Abstracted in THE JOURNAL, Dec. 23, 1916, p. 1967.

60. **Pellagrous Intestine.**—In twenty-five cases examined by Lynch, the only organisms recognized constantly were small yeast cells and *Blastocystis enterocola. Trichomonas intestinalis* was found in fifteen cases and *Endameba coli* in twelve. The blastocystis, trichomonas and endameba were limited to the large intestine and were most numerous in the cecum. In one case scrapings from the inflamed mucosa of the cecum showed a large number of minute spirochetes within the cytoplasm of the epithelial cells. They were very small and active and practically filled many of the cells. They disappeared shortly on exposure and none was found in stained sections. This observation could never be repeated. *Blastocystis enterocola* has assumed a position of interest on account of its presence in these necropsies as well as its frequency in feces. In these necropsies it has occurred in large numbers in the inflamed portions, especially in the cecum, and has been found throughout the large intestine. It has appeared to be particularly active when the ulcer is present. A description of the parasite will be published later. While it is considered as having no pathogenic importance, it appears to be comparable to intestinal parasites such as endameba or trichomonas as an indicator of the prevalence of, and liability to, fecal contamination of the food or drink of an individual or community. No known pathogenic organism has been recognized as having any direct relationship to the "pellagrous intestine" in question.

63 and 64. Abstracted in THE JOURNAL, Dec. 23, 1916, pp. 1966 and 1967.

Texas State Journal of Medicine, Fort Worth

April, XII, No. 12

78 Outlook for Better Obstetric Practice. M. B. Stokes, Houston.—p. 456.
79 Diagnosis of Acute Osteomyelitis. W. B. Thorning, Houston.—p. 459.
80 Pyelitis in Women. C. H. Harris, Fort Worth.—p. 462.
81 Pyelitis in Children. C. R. Hannah, Dallas.—p. 465.
82 Functional Renal Diagnosis. G. T. Hall, Big Springs.—p. 466.
83 Ammonia and Acetone Content of Urine as Aids in Directing Treatment. H. L. Wilder, Clarendon.—p. 469.
84 Kidney; Its Relation to Life Insurance. G. C. Lechenger, Houston.—p. 471.
85 Significance of Albuminuria. C. H. Brooks, Waco.—p. 473.
86 Significance of Casts. P. C. Murphy, Waco.—p. 474.
87 Knocking One Another. W. D. Jones, Dallas.—p. 475.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Archives of Radiology and Electrotherapy, London

March, XXI, No. 10

1 Simple Methods of Jaw Roentgenography. H. A. Eccles.—p. 313.
2 History of Electrotherapy. H. A. Colwell.—p. 320.
3 Use of Repeated Roentgen Examinations for Observing Progress in Cases of Osteomyelitis. R. W. A. Salmond.—p. 327.

British Medical Journal, London

March 24, I, No. 2934

4 *Surgical Shock and Some Allied Conditions. Report of Medical Research Committee.—p. 381.
5 Medicine in Morocco. A. Tacquin.—p. 384.
6 Origin of Electric Currents Led Off from Human Body, Especially in Relation to Nerve Leaks. W. M. Bayliss.—p. 387.
7 Operative Treatment of Injury of Peripheral Nerves. J. R. White.—p. 388.
8 *Case of Enterospasm in which Portion of Intestine Involved was of Unusual Extent. C. H. Whiteford.—p. 392.
9 Practical Methods of Anesthesia. J. T. Gwathmey.—p. 393.

March 31, No. 2935

10 Infection of Hemothorax by Anaerobic Gas Producing Bacilli. T. R. Elliott and H. Henry.—p. 413.
11 Dysentery. T. J. C. Evans.—p. 418.
12 Two Cases of Heart Failure in Operating Room Treated by Heart Massage; Recovery. E. S. Molyneux.—p. 420.
13 *Relation of Peridental Gingivitis to Vincent's Angina. F. E. Taylor and W. H. McKinstry.—p. 421.
14 Abdominal Kneading in Treatment of Intestinal Stasis. J. S. Bolton.—p. 422.
15 Early Complications Resulting from Retained Bone Fragments in Case of Gunshot Wound of Head. We E. Tyndall.—p. 423.
16 Combined Suspension and Extension Apparatus for Compound Fractures about Hip. G. M. Hodges.—p. 423.

4. **Surgical Shock.**—The failure of injections of physiologic saline in fully developed shock is one of the phases discussed in this report. Experiments already made seem to indicate that better results might be obtained by the use of intravenous injections of hypertonic saline, the value of which in the treatment of cholera and bacillary dysentery is already familiar. Whether the action of these is entirely due to the passage of water into the vessels by osmosis, or in part to a restorative effect of the hypertonic solution on capillary tone, is not clear. Calcium ions have been found to have a specific action in reducing abnormal permeability of capillaries. It seems reasonable, therefore, to suggest that a fluid representing a concentrated Ringer solution should be used, rather than one in which only the proportion of sodium chlorid is increased. The following formula is suggested:

Sodium chlorid	2 gm.
Potassium chlorid	0.05 gm.
Calcium chlorid	0.05 gm.
Water	100 c.c.

8. **Enterospasm.**—Celiotomy in Whiteford's case demonstrated that the stomach was enormously distended by gas, measuring in its greatest circumference 14 inches, and that the duodenum was uniformly distended by gas (diameter 1¾ inches). The small intestine was traced downward for its whole length. The upper 3 feet of jejunum were distended by gas to the size of the duodenum. Three feet from the duodenum the jejunum became abruptly narrowed, being in a state of intense contraction. The next 3 feet of jejunum was uniformly contracted into a rugose, anemic cord half an inch in diameter. Below the spastic area the rest of the small intestine was normal, as was the large bowel.

13. **Peridental Gingivitis and Vincent's Angina.**—As the result of their investigations the authors suggest that when a patient complains of a sore throat which presents the characters of Vincent's angina it is essential to examine the tooth margins for evidence of peridental gingivitis or pyorrhea, and that smears be made from both sources for the detection of the causal organisms. When found to be present, the peridental gingivitis should be adequately treated as well as the Vincent's angina; otherwise the condition is likely to persist indefinitely and to cause repeated recurrence of the sore throat.

Dublin Journal of Medical Science

December, 1916, CXLII, No. 540

17 *Experiences of Renal Surgery. W. Taylor.—p. 361.
18 Allen Treatment of Diabetes. G. E. Nesbitt.—p. 379.

January, CXLIII, No. 541

19 Fractures and Fracture Dislocations. J. S. McArdle.—p. 1.
20 Vaccine Therapy in Treatment of Rheumatic Conditions. W. M. Crofton.—p. 4.
21 Hypnotism. C. P. Smyly.—p. 10.
22 Postmortem Findings in Two Cases of Hectic Fever. J. Moore.—p. 31.

17. **Experiences of Renal Surgery.**—Taylor has performed 138 operations on 128 patients. The operations consisted of 92 fixations, 26 total nephrectomies, 1 partial nephrectomy and 19 nephrotomies. Of the 19 nephrotomies, 5 were merely exploratory, and 14 were for the removal of calculi (in the case of one patient calculi were removed from both kidneys). There was one death. This death occurred in the case of a man whose left kidney was removed for hydronephrosis. There was nothing difficult about the operation. On the thirteenth day he was walking about. He died suddenly without warning. There were 92 fixations in 83 patients, 9 being double nephropexies. Of the 19 nephrotomies, performed on 18 patients, 14 were for the removal of calculi (in one patient calculi were removed from both kidneys), one was an exploration of the left kidney for very severe hemorrhage. The

liver, lymph node, urinary bladder wall, omentum, appendix and ascitic fluid; budding forms were within and without *endothelial* leukocytes.

Medical Record, New York

April 14, XCI, No. 15

29 Some of Commoner Deviations from Ordinary Met with in Examination of Heart of Supposedly Normal Individuals. W. S. Thayer, Baltimore.—*p. 617.*
30 Endocrine Neurasthenia. T. A. Williams, Washington, D. C.—p. 623.
31 Recurrence After Thyroid Operations. S. P. Beebe, New York. —*p. 627.*
32 Ether Hypnosis in Psychotherapy. F. R. Starkey, Detroit.—p. 631.
33 Gas Gangrene; Report of Two Cases. C. W. Roberts, Atlanta, Ga.—p. 632.
34 Importance of Roentgen-Ray *Diagnosis in Dentistry.* A. M. Nodine, New York.—p. 634.

Nebraska State Medical Journal, Norfolk

March, II, No. 3

35 Etiology and Pathology of Lobar Pneumonia. A. Sachs, Omaha. —p. 251.
36 Treatment of Pneumonia. E. L. Bridges, Omaha.—p. 254.
37 Chronic Alveolar Abscess as Source of Systemic Disease. W. L. Shearer, Omaha.—p. 258.
38 Roentgen Treatment of Uterine Hemorrhage. E. W. Rowe, Lincoln.—p. 261.

Northwest Medicine, Seattle

April, XVI, No. 4

39 Tuberculosis of *Cecum; Report of Case.* C. W. *Sharples, Seattle.* —p. 97.
40 *Volvulus; Report of Cases. R. E. McKechnie, Vancouver, B. C. —p. 101.
41 *Syphilis *of* Stomach; *Report of* Case. P. Rockey, Portland, Ore. —p. 103.
42 Stomach Operations in Aged. J. B. Eagleson, Seattle.—p. 106.
43 Gallbladder Disease. O. F. Lamson, Seattle.—p. 108.
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48 Lipectomy; Report of Case. J. P. Schutt, Bremerton.—p. 118.

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Philippine Journal of Science, Manila

July, 1916, XI, Sec. B, No. 4

56 Relation Between Amount of Cholera Culture Injected into Gallbladder and State of Cholera Carriers in Experimental Animals. O. Schobl, Manila.—p. 153.
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59 *Transmissibility of Pellagra—Experimental Attempts at Transmission to *Human Subject. J. Goldberger,* Washington, D. C. —p. 277.
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70 Bone Graft in Surgery. F. G. Hodgson, Atlanta, Ga.—p. 331.
71 Some Medicolegal Difficulties *Met with by Railway* Surgeon. J. L. Jelks, Memphis, Tenn.—p. *334.*
72 Resuscitation of New-Born. R. W. Faulk, Monroe, La.—p. 337.

Medical Journal of Australia, Sydney

March 17, I, No. 11

45 Rise of Casualty Clearing Station. A. L. McLean.—p. 221.
46 Milk Curdling Properties of Pancreatic Juice. H. G. Chapman and A. H. Moseley.—p. 223. To be continued.
47 Intestinal Drainage in Septic Peritonitis. A. J. Nyulasy.—p. 226.

Archives Médicales Belges, Paris

February, LXX, No. 2, pp. 97-192

48 *Parenteral Injections of Peptone in Treatment of Infectious Diseases. (Des injections de peptone dans le traitement de la fièvre typhoïde et des autres états infectieux.) P. Nolf.—p. 97.
49 *Spirochete Jaundice. (47 cas de spirochétose ictéro-hémorrhagique.) L. Wilmaers and E. Renaux.—p. 115.
50 Roentgen Localization of Foreign Bodies. (La localisation des corps étrangers.) Henrard.—p. 135.
51 Present Status of Primary Suture of War Wounds. (La suture primitive des plaies de guerre.) R. Focquet.—p. 148.

48. **Parenteral Injection of Peptone in Treatment of Infectious Diseases.**—Nolf has been continuing during the war his study of parenteral injection of albumoses and peptones as a means of modifying the colloidal balance of the blood plasma, and thus transforming the clinical picture. Several years ago he called attention to the efficacy of this in treatment of a tendency to hemorrhages, whether from congenital hemophilia or insufficiency of the liver, severe infection or purpura. He also established that this same measure might check the tendency to paroxysmal hemoglobinuria. His war experience has further demonstrated the efficacy of parenteral injections of peptone in the treatment of typhoid, warding off intestinal hemorrhage from reduced coagulating power of the blood. In severe cases of typhoid, pinching, rubbing or pricking the skin may start small subcutaneous hemorrhages. These are the patients liable to develop intestinal hemorrhage. He uses 10 c.c. of a 5 per cent. solution of peptone, and makes the injection in the gluteal muscle, repeating it every day if there is much tendency to hemorrhage or every second day as a preventive. The advantages of peptone are that it is readily obtainable, can be sterilized at 120 C., and that the intensity of the reaction can be graduated by the dose.

Nolf also describes experiences with it in intravenous injection. When injected slowly, not more than 5 c.c. of a 10 per cent. solution per minute, there are few and briefly transient signs of a reaction, but they are intensified if the injection is made rapidly. The pulse is the guide here. An assistant counts the pulse aloud, and the inflow is retarded or arrested if the figure goes up above the preceding pulse rate. When there is fever, the temperature runs up by 2 or 4 degrees C. but soon drops, and the patient sweats, feels relieved and more inclined to sleep and there may be transient polyuria. Tympany also is favorably modified. He emphasizes that there is nothing specific about the peptone. Its effect is probably of the same nature as that from the colloidal metals, autoserotherapy or injection of any antigen. Distilled water might answer the same purpose. All these act probably by disturbing the balance of colloids in the blood plasma, and thus inducing a more or less violent reaction in the apparatus which regulate this balance. Hence the parenteral peptone injections might have a favorable influence on infections of all kinds, and his experience has confirmed this assumption in a few cases of scarlet fever, erysipelas, acute articular rheumatism and streptococcus septicemia.

49. **Icterohemorrhagic Spirochetosis.**—Wilmaers and Renaux say that there are certain clinical points of difference between this spirochete hemorrhagic jaundice and Weil's disease, and that no one to date has been able to cultivate a spirochete from Weil's disease at all like that of the Inada-Ido spirochetosis. The latter was first noticed in Belgium in August, 1916, at the Bourbourg hospital to which all the jaundice cases are referred. Before this all the cases had been simple catarrhal jaundice, but in August they began to come in very severe, and by January, there had been forty-seven of this spirochetosis type, confirmed bacteriologically in thirty-one, out of a total of 253 cases of jaundice. The onset is sudden and stormy, but only about 50 per cent. of the patients displayed the hemorrhagic tendency. In two of the fatal cases there was rebellious epistaxis. The early and practically constant presence of urobilin in the urine testifies to the damage to the liver, while albuminuria and kidney cells in the urine and the scanty amount indicate serious impairment of the kidneys. In fact, they remark, a better name for the disease would be hepatonephritic jaundice. Prostration and headache are pronounced and convalescence is long, with much anemia, even in the milder cases. The jaundice develops by the second to fourth day and has a peculiar cachectic tint. The fever curve is characteristic: 39 or 40 C. by the first or second day, keeping there for two or three days, with slight morning remissions, dropping by lysis, and becoming normal by the seventh to ninth day. After a few days of apyrexia the fever may return and show the same curve but less intense and less regular. On account of the evident injury of the liver and kidneys, they never ventured to use salvarsan or its substitutes, and quinin never seemed to benefit. Sodium salicylate and sodium sulphate, milk diet and epinephrin to combat the low blood pressure, were the main reliance for symptomatic treatment, with tonics later.

Bulletin de l'Académie de Médecine, Paris

March 6, LXXVII, No. 10, pp. 307-344

52 *The Antitoxic Action of the Thyroid in Uremia. Rémond and Minvielle.—p. 334.
53 Bullet Removed from Heart after Three Months; Recovery. (Plaie du cœur par balle restée fixée dans l'épaisseur du ventricule gauche. Absence presque complète de réaction cardiaque. Intervention opératoire trois mois après. Guérison.) H. Gaudier.—p. 339.

March 20, No. 12, pp. 375-408

54 A Family with Inherited Syphilis; Five of Eight Children Require Appendicectomy. Gaucher.—p. 387.
55 Solutions of Zinc Chlorid for Painless Injection. P. Carles.—p. 391.
56 *Immediate Exercise as Principle for Treatment of War Wounds of Joints. (Mobilisation active immédiate pour les plaies de guerre, du genou et du coude.) C. Willems.—p. 394.
57 Experimental Generalized Vaccinia. L. Camus.—p. 402.
58 Preparations of Strophanthus in Treatment of Cardiac Insufficiency. (L'ouabaine cristallisée d'Arnaud dans le traitement de l'insuffisance cardiaque.) Vaquez and Lutembacher.—p. 405.

52. **Antitoxic Function of the Thyroid.**—Rémond and Minvielle report here further experimental research to determine the part played by the thyroid in uremia. The findings demonstrate that the thyroid has unquestionably some influence on the clinical picture in case of uremia, either by neutralization of toxins, or it may stimulate the functioning of the suprarenals, or it may have an inhibiting action on some secretion antagonistic to that of the suprarenals. Four recently thyroidectomized animals showed marked suprarenal insufficiency, but they also presented inflammatory lesions in the kidneys. From these data they conclude that the thyroid has a toxin-destroying function, and that the loss of this function after removal of the thyroid allows these toxins to accumulate in the blood and damage both the kidneys and the suprarenals. The clinical picture of uremia was notably aggravated by removal of the thyroid with consequent loss of its antitoxic action.

56. **Exercise from the First for Wounds of Knee or Elbow.**—Willems has been preaching since 1909 the advantages of treating extravasation of blood in the knee by puncture, followed at once by the physiologic use of the knee. He now announces that his experience in industrial accidents and in these years of war has amply convinced him that systematic immobilization is contrary to physiology and should be definitely discarded. The joint will not become stiff and the muscles will not atrophy if the active joint movements are kept up. Exercising the joint in bed is not enough; it must have its physiologic play, as in walking. Exercising the joint is not painful, he says, even when there are lesions of the bones, on condition that the parts do not become displaced; in this case there is liable to be intense pain. There is no functional impotence at first unless the joint is distended with an effusion. Later it may develop from atrophy of the muscles. Far from irritating the wounded articulation, these movements promote absorption of effusions and infiltration, owing to the kind of internal massage which they induce. When the joint is widely opened every movement forces out pus, and the synovial membrane thus empties itself much more effectually than with the most perfect drainage. More than this, movements are the best of all means to ensure the reabsorption of the exudation around the joint, the invariable accompaniment

84 Abdominal Wounds in War. G. Campora.—p. 230.

February 25, No. 16, pp. 241-256

85 Neuroses in Soldiers on Active Service. (Simulazione e nevrosi nella pratica castrense.) A. Salmon.—p. 241.

81. **Epidemic Meningitis.**—Belliboni remarks that enlargement of the spleen is an aid in differentiating epidemic from tuberculous meningitis, also the lack of harmony between the temperature, pulse and respiration. The stiffness of the vertebrae, the premastoid and Kernig signs, ocular phenomena and disturbances in sensibility depend on the region of the nervous system first involved. A catarrhal condition in the nasopharynx also aids in differentiation. He describes six cases, with the death of one of the three children, and extols the efficacy of intramuscular injections of antimeningococcus serum. It should be supplemented by disinfection of the nasopharynx.

82. **Goggles for the Firing Line.**—The iron goggles illustrated have slits, transverse and slanting, which permit ample vision. A circular piece of woolen goods is fastened around the part that serves as the lens. This absorbs sweat dripping from the forehead. The goggles protect against the sun and against small flying particles of shells, while the slits have the effect of rendering vision more acute.

Policlinico, Rome

March 11, XXIV, No. 11, pp. 337-368

86 *Bacteriologic Findings in Insane Pellagrins. (Ricerche batteriologiche sulle psicosi pellagrose.) G. Tizzoni.—p. 337.

87 Portable Device for Extension of Fractured Humerus. (Nuovo apparecchio ad estensione per fratture dell'omero.) G. Pierucci.—p. 339.

88 Organization of Field Hospitals. (Ancora a proposito dei servizi sanitari campali.) G. Mendes.—p. 341.

March 18, No. 12, pp. 369-404

89 *Pale Spirochetes Coiled Around Central Cylinder. (Nuovi reperti nel ciclo di sviluppo della spirochaeta pallida, e loro rapporto colla patogenesi della metalues.) E. Ciarla.—p. 369.

90 *Asepsis in Treatment of Infected Wounds in War. (Sul trattamento delle ferite settiche.) G. B. Stretti.—p. 372.

91 Palpitation of the Heart in Soldiers. (Il cardiopalmo nei soldati.) G. Galli.—p. 378.

92 Treatment of Stiffness of the Joints after War Wounds. (Delle anchilosi e rigidita articolari nei postumi traumatici di guerra.) T. C. Ippoliti.—p. 381.

86. **Bacteriologic Findings in Insane Pellagrins.**—Tizzoni declares that the germ he has described as the specific agent of pellagra was found present in the blood of all the numerous insane pellagrins examined at the Mombello Asylum. The findings were positive in all without exception, as also in a case of pellagrous skin lesions. In this case the germ was cultivated from the cerebrospinal fluid and spleen and from the scales from the skin lesions. He states that the germ passes through three phases in its cycle of evolution, first a bacillus, then a streptococcus and finally a staphylococcus, changing from one phase to the other in irregular fashion. The positive findings in the blood may continue through years, even in the mild forms of pellagra or intermissions, when the patients seem to be quite free from manifestations of the disease. The passage from one phase to another corresponds with some change in the manifestations of the disease. The streptococcus phase seems to be the most toxic, the staphylococcus phase next. The lack of any appreciable toxic action on the nervous system from the bacillary type of the germ is confirmed by its lack of coagulating and fermentative properties. Tizzoni is professor of general pathology at the University of Bologna and member of the Italian Academy of Sciences. He does not give any further details of the pellagra germ in this communication. He has been studying it since early in 1915.

89. **The Cycle of Development of the Spirochaeta Pallida.**—Ciarla has been studying for three years various phases of the development of the pale spirochete, and here relates that he has discovered a means to show phases of its development other than those hitherto described. In this preliminary communication he does not give the details of his technic, but presents a number of illustrations of these various phases. Some of them represent large spirochetes found in the organs of syphilitic fetuses. The spirals of the spirochete are extremely regular and form a comparatively stiff, straight coil as the spirals are wound around a central cylinder, a kind of membrane, forming a hollow tube. This central cylinder has also terminal coils or balls, suggesting terminal germinal buds. Some of the spirochetes terminate in a kind of rosette, like petals. This latter type was found only in the spinal ganglia of a tabetic. He thinks it possible that these rosettes are a spore phase of development of the spirochetes, which occurs only in tabes and progressive paralysis, explaining their peculiarly tenacious character.

90. **Asepsis in Treatment of Infected Wounds.**—The Journal described, Oct. 7, 1916, Ruggi's principles for treatment of war wounds, clearing out, ample drainage and then leaving the rest to Nature. Constant surveillance is indispensable, ready at any moment to reenforce the natural processes if they show signs of being unable to cope with the infection, as evidenced by pain, hemorrhage and rising temperature. His plea is that even the slightest displacement of any of the tissues in the wound permits germs to proliferate in the intervening spaces. The part must be strictly immobilized and the dressings changed only when absolutely necessary. The arguments for this method of treatment are presented anew by Stretti, assistant at the university surgical clinic at Bologna, of which Ruggi is chief. He calls attention to the excellent results obtained there with the Ruggi technic and replies to some theoretical objections made recently by Silvestrini. The wounded do not reach Bologna until several days after their first dressing, and the wound once cleared out, drained, dressed, and the limb immobilized, it is left unmolested sometimes up to eighteen days or even more. No statistics or further details of the technic are given.

Riforma Medica, Naples

February 17, XXXIII, No. 7, pp. 169-196

93 *Epilepsy from Nicotine Poisoning. (Sulla epilessia tabacica.) E. Tedeschi.—p. 169.

94 Gas Gangrene. C. Oliva.—p. 172. To be continued.

95 Treatment of War Wounds of the Lungs. E. Morelli.—p. 180. Commenced in No. 6, p. 146.

96 Epidemic Spirochete Jaundice. U. Gabbi.—p. 183. Commenced in No. 6, p. 155.

February 24, No. 8, pp. 197-224

97 Vaccine Therapy of Malta or Undulant Fever. (Contributo alla vaccinoterapia della febbre mediterranea.) C. Vallardi.—p. 197.

98 *Paralysis of the Diaphragm. (L'emiplegia diaframmatica nella patologia del mediastino.) A. Ferrannini.—p. 208.

99 Present Status of Ascending Traumatic Neuritis. L. Ferrannini.—p. 211.

93. **Tobacco Epilepsy.**—Tedeschi's first patient was a man of 32 presumably healthy until three years ago when he had a seizure resembling an epileptic seizure, and, after a few days' interval, a few more. He was in the habit of smoking sixty or seventy cigarettes a day but did not drink and had no history of venereal disease. On suspension of smoking he had no further attacks for two or three years. Believing himself cured, he began to smoke again, when suddenly, on the street, he had a severe and complete epileptic seizure, with loss of consciousness and biting the tongue. One of his mother's sisters was an epileptic. In a second case the man of 29 did not smoke, but chewed tobacco almost constantly. He developed typical epileptic seizures but had no more after giving up the use of tobacco. Tedeschi's investigation of the female workers in a large tobacco factory resulted in the discovery of three that had had epileptic seizures during work hours. Any such tendency outside of work hours would be concealed for fear of being dismissed. The three known cases were in women of 20, 36 and 35. The last mentioned had been a cigarmaker for seventeen years. She seemed otherwise healthy except for occasionally irregular and scanty menstruation, and had no seizures when she quit work for a year, but they returned then in a very severe form on resuming her work. There was no family history of epilepsy in this case. Tedeschi remarks that in all the known similar cases on record the age was between 20 and 36. Experimental research has confirmed that tobacco may induce a tendency to convulsions in animals. A number of research workers have recently reported cellular changes in the cortex of rabbits and guinea-pigs long submitted to slow tobacco intoxication. Peri reported in 1906 that workers on tobacco die

mostly from lesions in the circulatory system, especially from changes in the cerebral arteries. All these data sustain the assumption that tobacco is able to induce actual epilepsy in certain rare cases, even in the absence of a special predisposition.

98. **Paralysis of the Diaphragm.**—Ayerza called attention to the clinical picture resulting from paralysis of one half of the diaphragm. The paralysis of the phrenic nerve may be of diphtheric origin, or there may be atrophy of the diaphragm muscle from lesions in the central nervous system, from tuberculous mediastinal glands, sarcoma or aneurysm of the aorta. Roentgen examination will differentiate this diaphragm hemiplegia from echinococcus disease of the liver, as Ferrannini explains with a roentgenogram. The paralyzed diaphragm slants smoothly upward toward the outside, while with echinococcus disease in the liver the diaphragm is liable to bulge in the center. The paralysis may show phases of improvement and aggravation, as the unilateral lesicn of the phrenic nerve varies in intensity.

Siglo Medico, Madrid

March 10, LXIV, No. 3300, pp. 145-164.

100 *Substances in Urine, besides Glucose, that Give a Positive Response to Fehling's Test. (Sacarurias.) A. Pi Suñer.—p. 146.
101 Portable Apparatus for Electrotherapeutics. Petit (Barcelona).—p. 150.

March 17, No. 3301, pp. 165-184

102 *Preventive Treatment of Rabies. (6,000 casos de tratamiento profilactico de la rabia.) F. Murillo.—p. 166.

100. **Sugars Other than Glucose in the Urine.**—Pi Suñer is professor of physiology at Barcelona, and he discusses here the different *sacarurias,* as he calls them. He classifies them in three groups, those accompanying diabetes, the alimentary types, and the essential. Almost all types of sugars and pseudosugars can be encountered with diabetes, but they do not seem to modify the symptoms or treatment. The sugars found in essential sacarurias are maltose, lactose, pentose and pseudolevulose or isoglucuronic acid. The latter seems to be most abundant on a meat diet, and hence reduction of meat is called for. When this pseudolevulosuria accompanies diabetes, it may be wise to alternate periods of dieting directed first to one form of sugar and then the other.

102. **Rabies in Spain.**—Murillo reviews the 6,000 cases in which preventive treatment for rabies was given at the Instituto Nacional de Higiene at Madrid since 1901. Of the total 6,000, 3,162 were men and 1,140 children; 32 were physicians and 45 veterinarians—cases of laboratory or necropsy inoculations. There were 24 deaths among the 6,000 cases, but 10 occurred before the treatment had had a chance to prove its efficacy, leaving 14 in which the treatment proved a failure either because too long an interval had elapsed or because for some reason the organism was unable to generate sufficient antibodies. The mortality was thus 0.23 per cent. Of the total 6,000 patients 2,000 had been bitten at Madrid, showing that the ordinances against dogs are not enforced. The lesions in the total 6,000 were from cats in 422 cases, mules and asses 83, cows 131, horses 4 and dogs 5,412. Other animals mentioned are rats, deer, goats, monkeys, rabbits, wolves, foxes and ferrets. The different months averaged about the same, with a slight preponderance of April, May, June and July.

Russkiy Vrach, Petrograd

1916, XV, No. 51, pp. 1201-1224

103 The Scientific Work of N. O. Ziber-Sumova. M. D. Ilin.—p. 1201.
104 Exogenous Uric Acid in Urine as Differentiating Sign of Gout. (Ekzogennaya mochevaya kislota kak rasposnav. priznak podagri. Liechenie podagri atophanom.) G. Y. Yavein.—p. 1203.
105 War Wounds of Vessels. N. A. Dobrovolskaya.—p. 1210. Continuation.
106 *Scurvy at Petrograd. 500 Cases. (Nabliudeniya nad tsingoiu v Petrograd v 1916 godu.) A. A. Nechaeff.—p. 1216.

No. 52, pp. 1225-1232

107 Wounds of Vessels and Traumatic Aneurysms. (K ucheniyu o ranenii sosudov i o traum. aneurizmakh.) N. A. Dobrovolskaya.—p. 1225. Conclusion.

106. **Scurvy at Petrograd.**—Nechaeff's figures show that each year since 1894 till 1915 there have been from 13 to 275 cases of scurvy admitted to the Obukhovskoi Hospital. The smallest number was in 1914 and the largest in 1900. In 1916 an actual epidemic developed, 500 cases being treated there, nearly all in the months of May and June. This predominance of May and June, with the month before, was noticed also through all the preceding years. About 7 per cent. of the 500 scurvy cases terminated fatally. Nechaeff states that the quality of the food supply in Petrograd during 1916 was below the usual standard, and extensive use was made of frozen meat. He discusses from the etiologic point of view various features of the epidemic, his conclusions being that the epidemic of scurvy at Petrograd is traceable to the extensive use of frozen meat or of defective or spoiled potatoes or both. The patients had not been getting the proper proportions of vitamins. The freezing may have destroyed those in the meat. He rejects the theory that scurvy is due to chronic poisoning from the products of decomposition. It is more probably a vitamin deficiency disease.

Hospitalstidende, Copenhagen

February 28, LX, No. 9, pp. 197-220

108 Experimental Basis for Optochin Treatment. O. Thomsen.—p. 197.
109 *Present Status of Oculocardiac Reflex. (Øje-Hjærtereflexen: Réflexe oculo-cardiaque; Dagnini's Reflex.) V. C. E. Petersen.—p. 206.

March 7, No. 10, pp. 221-248

110 Optochin in Treatment of Pneumonia. (Optochinbehandling.) F. Vermehren.—p. 221.

109. **Present Status of Oculocardiac Reflex.**—Petersen summarizes the literature on this subject since Dagnini in 1908 called attention to the change in the pulse on compression of the eyeballs. He cites reports of the exaggeration of the reflex in epileptics, the increase greater the more frequent the seizures. Bromids attenuate it. The reflex seems to be lost very early in tabes, and this might aid in early differentiation. Gautrel found an inverse reaction in certain tabetics. In short, Petersen concludes, this reflex deserves great attention both from the medical and the neurologic point of view, especially as it is so simple and easy to elicit. He gives the pulse chart of a man of 22, a teacher, who complained of occasional attacks of arrhythmia, but the objective findings were all apparently normal. On compression of the eyeballs, bradycardia developed, and when the pressure was released there were presystoles. The patient said that the sensations during his attacks were like this presystole stage. In repose the pulse showed merely slight respiratory arrhythmia. The presystoles of nervous origin—in contrast to those resulting from myocardium disease—occur or are increased during the first phase of compression of the eyes, but stop when the pressure is removed. They can thus serve to differentiate between nervous and cardiac presystoles. Lian has proposed to utilize this pressure on the eyeballs reflex as a means to arrest paroxysmal tachycardia. Pressure on the eyeballs seems to be the most potent means at our command to influence the vagus and thus indirectly control heart action. It has proved more effectual for this in Petersen's hands than compression of the nerves in the neck.

Ugeskrift for Læger, Copenhagen

February 8, LXXIX, No. 6, pp. 225-250

111 Peptic Ulcers. (Et Par sjældne Ulcerationer i Fordøjelseskanalen.) E. Meulengracht.—p. 225.
112 Present Status of Urochromogen Reaction. C. Schwensen.—p. 231.
113 Technic for Reduction of Dislocation of Humerus. (Bidrag til Repositionstekniken ved Luxatio humeri subcoracoidea.) G. V. T. Borries.—p. 235.
114 Technic for Extraction of Teeth by Nonspecialist. (Et lille Bidrag til Tandextraktionens Teknik.) G. V. T. Borries.—p. 239.

February 15, No. 7, pp. 251-278

115 Otogenous Pyemia without Sinus Phlebitis. J. R. Kragh.—p. 251.
116 *Combined Radiotherapy. (En lysbiologisk Iagttagelse.) E. Collin.—p. 261.

116. **Combined Radiotherapy.**—Collin relates that a combination of the arc light and mercury vapor light exposures induced a more powerful reaction than either alone. He noticed further that the erythem developed earlier and more intense the higher the temperature of the skin.

THE NEW YORK SESSION

AMERICAN MEDICAL ASSOCIATION, SIXTY-EIGHTH ANNUAL SESSION, NEW YORK CITY, JUNE 4-8, 1917

OFFICIAL CALL

TO THE OFFICERS, FELLOWS AND MEMBERS OF THE AMERICAN MEDICAL ASSOCIATION

The sixty-eighth annual session of the American Medical Association will be held at New York City, June 4-8, 1917.

The House of Delegates will convene at 10 a. m., Monday, June 4. In the House the representation of the various constituents associations for 1917 is as follows:

Alabama	3	New Hampshire	1
Arizona	1	New Jersey	3
Arkansas	2	New Mexico	1
California	4	New York	11
Colorado	2	North Carolina	2
Connecticut	2	North Dakota	1
Delaware	1	Ohio	5
District of Columbia	1	Oklahoma	2
Florida	1	Oregon	1
Georgia	3	Pennsylvania	9
Idaho	1	Rhode Island	1
Illinois	9	South Carolina	1
Indiana	4	South Dakota	1
Iowa	3	Tennessee	2
Kansas	2	Texas	5
Kentucky	4	Utah	1
Louisiana	1	Vermont	1
Maine	1	Virginia	3
Maryland	2	Washington	2
Massachusetts	5	West Virginia	2
Michigan	4	Wisconsin	3
Minnesota	2	Wyoming	1
Mississippi	2	Canal Zone	1
Missouri	5	Hawaii	1
Montana	1	Philippine Islands	1
Nebraska	2	Porto Rico	1
Nevada	1		

The fifteen scientific sections of the American Medical Association, the Medical Department of the Army, the Medical Corps of the Navy and the Public Health Service are entitled to one delegate each.

The general meeting, which constitutes the opening exercises of the Scientific Assembly of the Association, will be held at 8:15 p. m., Tuesday, June 5. The various sections of the Scientific Assembly will meet Wednesday, June 6, at 9 a. m., and subsequently, according to their respective programs.

The Registration Department will be open from 8:30 a. m. until 5:30 p. m., on Monday, Tuesday, Wednesday and Thursday, June 4, 5, 6 and 7, and from 8:30 a. m. to 12 noon, on Friday, June 8.

Rupert Blue, President.

Attest: Hubert Work, Chairman, House of Delegates.
Alexander R. Craig, Secretary.

MEMBERS OF THE HOUSE OF DELEGATES

A Preliminary Roster of the Legislative Body of the American Medical Association

The list of members of the House of Delegates for the session is incomplete, as a number of the state societies are yet to hold their meetings at which delegates will be elected. The following is a list of the holdover delegates and of the newly elected members who have reported to The Journal in time to be included:

STATE DELEGATES

ALABAMA
L. L. Hill, Montgomery.
E. F. Moody, Dothan.

ARIZONA
J. I. Butler, Tucson.

ARKANSAS
C. P. Meriwether, Little Rock.

CALIFORNIA
H. Bert Ellis, Los Angeles.
O. D. Hamlin, Oakland.

COLORADO
L. H. McKinnie, Colorado Springs.
Oliver Lyons, Denver.

CONNECTICUT
D. Chester Brown, Danbury.

DELAWARE
Willard Springer, Wilmington.

DISTRICT OF COLUMBIA
G. Wythe Cook, Washington, D. C.

GEORGIA
S. R. Roberts, Atlanta.
F. W. McRae, Atlanta.

IDAHO
C. R. Scott, Twin Falls.

ILLINOIS
T. O. Freeman, Mattoon.
C. W. Lillie, East St. Louis.
Robert S. Denny, Aurora.
A. M. Harvey, Chicago.
Hugh McKechnie, Chicago.
J. C. Krafft, Chicago.

INDIANA
J. Rilus Eastman, Indianapolis.
A. E. Bulson, Jr., Fort Wayne.
C. H. Good, Huntington.
Miles F. Porter, Fort Wayne.

IOWA
L. W. Littig, Davenport.
M. Nelson Voldeng, Woodward.

KANSAS
O. D. Walker, Salina.

KENTUCKY
C. L. Wheeler, Lexington.
W. W. Richmond, Clinton.

MARYLAND
Randolph Winslow, Baltimore.

MASSACHUSETTS
J. B. Blake, Boston.
H. G. Stetson, Greenfield.
L. F. Woodward, Worcester.

MICHIGAN
F. C. Warnshuis, Grand Rapids.
A. I. Lawbaugh, Calumet.

MINNESOTA
W. L. Beebe, St. Cloud.
H. P. Ritchie, St. Paul.

MISSISSIPPI
I. W. Cooper, Newton.

MISSOURI
Wilson J. Ferguson, Sedalia.
W. J. Frick, Kansas City.
H. L. Reid, Charleston.

MONTANA
J. H. Irwin, Great Falls.

NEBRASKA
I. H. Dillon, Auburn.

NEW HAMPSHIRE
C. W. Hannaford, Portsmouth.

NEW JERSEY
Edward Guion, Atlantic City.

NEW MEXICO
S. D. Swope, Deming.

NEW YORK
Wendell C. Phillips, New York.
W. J. Cruikshank, Brooklyn.
J. W. Fleming, Brooklyn.
F. E. Sondern, New York.
Dwight H. Murray, Syracuse.

OHIO
B. R. McClellan, Xenia.
C. D. Selby, Toledo.

OKLAHOMA
John W. Riley, Oklahoma City.

OREGON
Walter T. Williamson, Portland.

PENNSYLVANIA
A. R. Allen, Carlisle.
William F. Bacon, York.
Wilmer Krusen, Philadelphia.
Charles G. Strickland, Erie.
Frederick L. Van Sickle, Olyphant.
David N. Dennis, Erie.
Edward B. Heckel, Pittsburgh.
John D. McLean, Philadelphia.
C. L. Stevens, Athens.

PHILIPPINE ISLANDS
S. C. Gurney, Manila.

PORTO RICO
Jose S. Belaval, San Juan.

RHODE ISLAND
J. E. Mowry, Providence.

SOUTH CAROLINA
E. A. Hines, Seneca.

TENNESSEE
Perry Bromberg, Nashville.
A. F. Richards, Sparta.

TEXAS
M. L. Graves, Galveston.

UTAH
Sol G. Kahn, Salt Lake City.

VERMONT
Alan Davidson, St. Albans.

VIRGINIA
W. E. Anderson, Farmville.
Southgate Leigh, Norfolk.

WASHINGTON
Don Palmer, Seattle.
D. E. McGillivray, Pt. Angeles.

WEST VIRGINIA
Frank LeMoyne Hupp, Wheeling.
C. R. Ogden, Clarksburg.

WISCONSIN
T. H. Hay, Stevens Point.
Rock Sleyster, Waupun.
H. M. Brown, Milwaukee.

DELEGATES FROM THE SECTIONS

PRACTICE OF MEDICINE
Samuel J. Meltzer, New York.

SURGERY, GENERAL AND ABDOMINAL
Dean D. Lewis, Chicago.

OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY
Horace G. Wetherill, Denver.

OPHTHALMOLOGY
F. P. Calhoun, Atlanta, Ga.

LARYNGOLOGY, OTOLOGY AND RHINOLOGY
Robert Levy, Denver.

DISEASES OF CHILDREN
H. M. McClanahan, Omaha.

PHARMACOLOGY AND THERAPEUTICS
R. A. Hatcher, New York.

PATHOLOGY AND PHYSIOLOGY
H. Gideon Wells, Chicago.

STOMATOLOGY
W. C. Fisher, New York.

NERVOUS AND MENTAL DISEASES
George A. Moleen, Denver.

DERMATOLOGY
Richard L. Sutton, Kansas City, Mo.

PREVENTIVE MEDICINE AND PUBLIC HEALTH
William C. Rucker, Washington, D. C.

GENITO-URINARY DISEASES
Edward L. Keyes, Jr., New York.

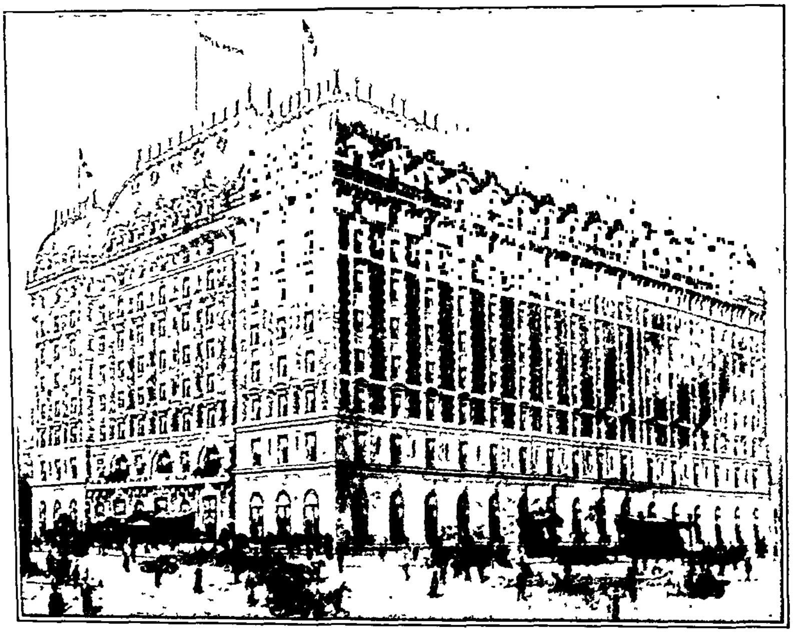
ORTHOPEDIC SURGERY
John Ridlon, Chicago.

MEDICAL NEW YORK CITY

The Medical Features of the Convention City*

To understand medical conditions in New York requires a certain knowledge of its geography and peculiarities of city government. The statement that New York has a population of 5,737,000 carries to the average mind the idea of a vast city. How vast it is can be comprehended only by comparison. It is composed of five great cities known as boroughs. In population, the Borough of Manhattan is larger than Chicago; Brooklyn is larger than Philadelphia; the Bronx is as large as Detroit; Queens is larger than Minneapolis; Richmond is larger than Salt Lake City.

These five boroughs are also five counties of the state of New York. Each county has its own county government and elects such county officers as district attorney, sheriff and county clerk. The great government interests of the city are carried on by numerous departments, each with its commissioner, appointed by the mayor. The departments of health and public charities come most nearly in touch with the medical profession. Most of these departments, like the health department, have their headquarters in the city hall region of Manhattan. They have, however, subheadquarters in each borough, with an official who has special duties in that borough. The reports of the health department cover the whole city and must be read with the knowledge that they are based on the population of the five boroughs.



The Hotel Astor.

MEDICAL SOCIETIES

Each of the five counties composing New York has its county medical society, independent of each other but affiliated with the state medical society. The state and county medical societies are all organized and chartered pursuant to the law of 1806. This was the greatest medical law of New York State and looms up like a landmark in its medical history. The state medical society was organized at once on the passage of the law, and numbers 8,454 members.

The Medical Society of the County of New York was organized in 1806, with 371 members. The membership is now 2,766. It was virtually a reorganization of a society which had been formed in 1795.

The Medical Society of the County of Kings was organized in 1822, and has a membership of 884. It maintains a handsome building in Brooklyn and performs the work assumed in many cities by the academy of medicine. In addition to its county society functions it maintains a medical library of over 70,000 volumes.

The Medical Society of the County of Queens-Nassau was organized in 1806. Its membership is 160.

The Medical Society of the County of Richmond was organized in 1806. Its membership is fifty-six.

The Medical Society of the County of the Bronx was organized in 1914. Its membership is 298.

These societies are all component parts of our organization, being affiliated with the state society and the American Medical Association. The State Medical Society of New York carries on five activities of especial interest. It publishes a monthly journal. It publishes an annual medical directory of New York, which includes also New Jersey and Connecticut. It defends its members when sued for alleged malpractice. This legal defense is accorded to every member in good standing, and the expenses are covered by the regular dues, no assessment or other charge being made. It maintains an active legislative committee which keeps close watch on all legislative work at Albany relating to medical subjects. It has a standing committee on medical economics.

The Medical Society of the County of New York, in addition to the usual society functions, takes an active interest in legislative matters and maintains a milk commission. It maintains a legal department at large expense for the prosecution of illegal and criminal practitioners. This work is the most extensive of its kind in the country.

The New York Academy of Medicine was founded in 1847 and incorporated in 1851. Its membership is limited to 1,200 resident fellows, and physicians of the entire city are eligible five years after graduation. Nonresident fellows are received to the number of 250. It has four special activities. It is divided into twelve sections, similar to those of the American Medical Association. Each section meets monthly and is presided over by its own chairman, while the Academy holds two meetings monthly presided over by the president. Its scientific work is of the highest type.

The second important feature of the academy's work is the academy building. This handsome structure shelters many professional organizations and is the medical center of Manhattan—in fact, of the greater city. The third and a most important feature of the academy's work is the maintenance of a medical library which now numbers 106,706 volumes, not including duplicates. The fourth is its committee on public health. This committee has developed a plan by which the public may be informed on medical questions, and the great departments of the city government may receive medical advice without advertising individual physicians or making them prominent. A question under consideration is referred to a subcommittee which reports to the whole committee. A decision, when reached, is given out as that of the Committee on Public Health, no names of individuals being given.

In the large size of their membership and the wide area from which it is drawn and in their peculiar and varied functions, the academy and the county societies differ from other medical societies and form a class by themselves. They divide between them functions which in some cities are fulfilled by a single body. These functions consist in the performance of certain duties to the public and to the medical profession as a whole. It is in this that they differ radically from other societies whose interests are centered in the *individual*. In these two societies interest is bestowed also on the *profession* and the *public*. The division of function between them has been made with great skill. They work side by side in perfect harmony, the membership of one being almost wholly included in that of the other, while the same names are frequently found on the official boards of each. The "academy idea" as developed in New York has been productive of great good and has been widely copied by other cities.

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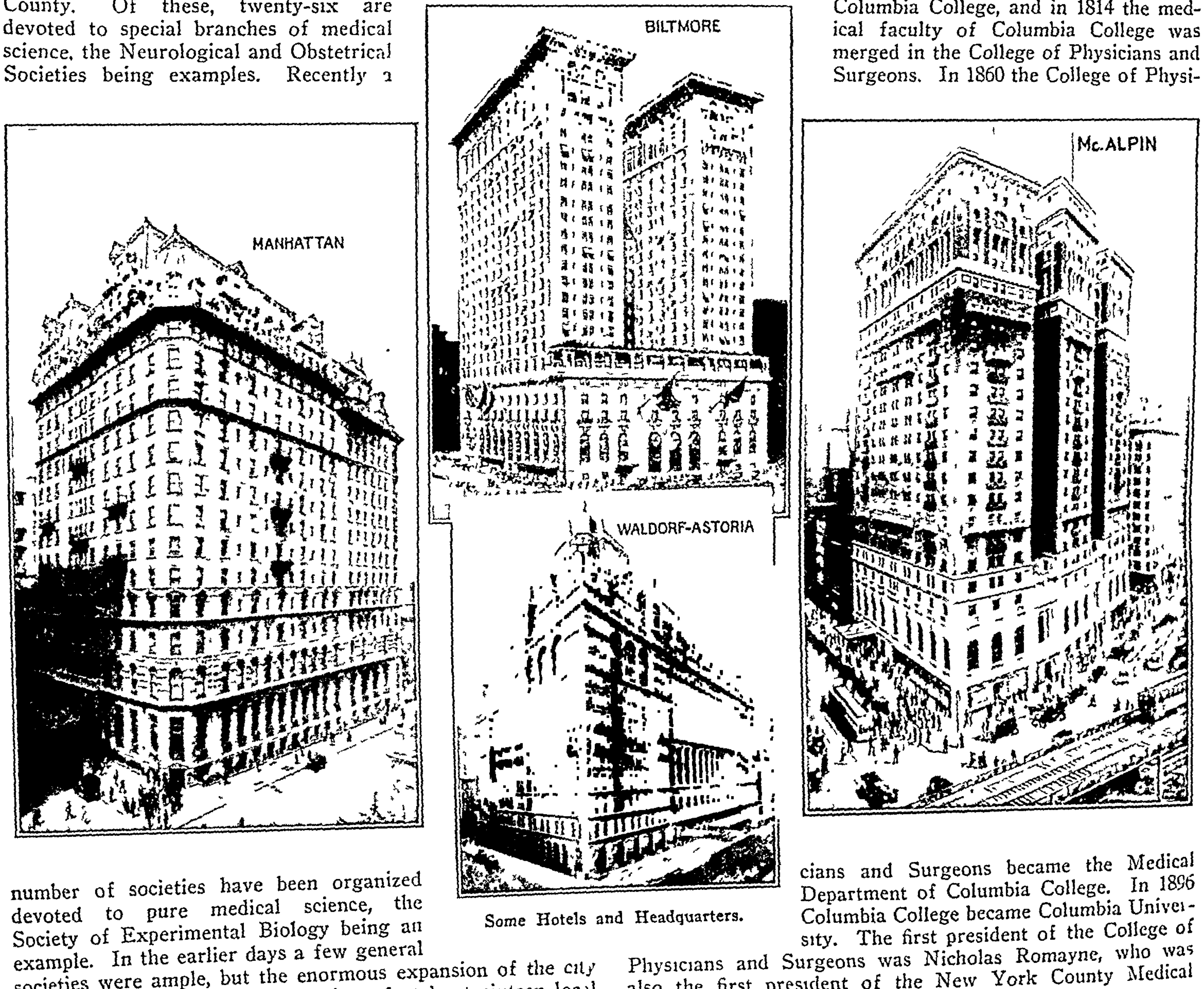
* We are indebted for this description of Medical New York City to the local committee on arrangements.

Osler says that medical societies are professional cement which binds professional men together. Certain it is that they are the most potent of all agencies in bringing medical men into touch with each other and fostering fraternal relations. New York is certainly not lacking in medical societies. There are some, indeed, who feel that they have been injudiciously multiplied. Including the eleven sections of the Academy of Medicine there are 152 medical societies in the city, of which 123 are in New York County. Of these, twenty-six are devoted to special branches of medical science, the Neurological and Obstetrical Societies being examples. Recently a number of societies have been organized devoted to pure medical science, the Society of Experimental Biology being an example. In the earlier days a few general societies were ample, but the enormous expansion of the city has been followed by the formation of at least sixteen local societies, of which the Harlem Medical Association is an example. These societies vary from semipublic bodies to private clubs which meet in the homes of the members.



Some Hotels and Headquarters.

The remarkable hospital development of the past three decades has been followed by the formation of a new type of medical society, namely, the hospital alumni society. The first of these to be formed in New York was the Society of the Alumni of Bellevue Hospital, in 1886. There are now at least twenty-seven such societies, ranging in numbers from a few dozen to the 380 of Bellevue. Two benevolent societies stand in a group by themselves, namely, the Physicians' Mutual Aid Association and the Society for the Relief of Widows and Orphans of Medical Men.

These facts may suggest some of the difficulties which have been encountered by the local Committee on Arrangements. In most cities that committee has one county society alone to consider and provide for. In New York it has been obliged to consider five county societies with an aggregate membership of 4,164.

MEDICAL COLLEGES

There are ten medical colleges in the state of New York. Of these, seven are in New York City. The remaining three are in a line extending across the state, being located at Albany, Syracuse and Buffalo. They draw their students largely from New York State, and return them to the state in large proportion when graduated. Of the seven colleges in New York City, one is located in Brooklyn, one in Bronx County, and five in New York County.

The College of Physicians and Surgeons is the oldest medical college in the state, having been chartered in 1807. King's College had a medical school which was organized in 1767. In 1784 King's College became Columbia College, and in 1814 the medical faculty of Columbia College was merged in the College of Physicians and Surgeons. In 1860 the College of Physicians and Surgeons became the Medical Department of Columbia College. In 1896 Columbia College became Columbia University. The first president of the College of Physicians and Surgeons was Nicholas Romayne, who was also the first president of the New York County Medical Society.

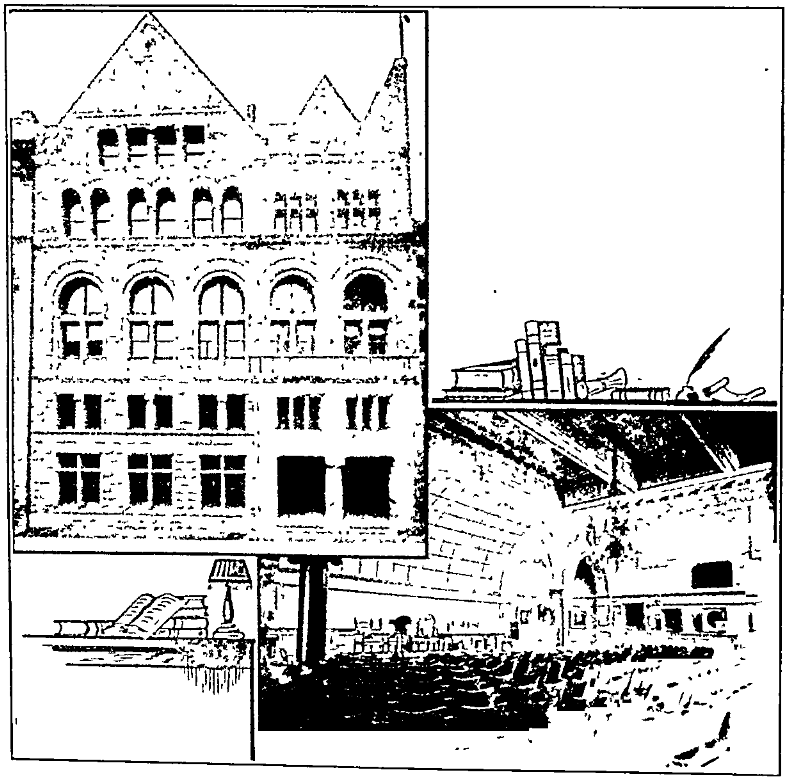
In the first faculty we find David Hosack, whose name has been perpetuated by the generosity of his descendants as Hosack Hall in the Academy of Medicine, in which the House of Delegates will meet. The second president was Samuel Bard, remembered in medical history as the man who first wrote a clear description of a type of "putrid sore throat" which was certainly diphtheria. His essay, published in 1770, Osler asserts, "was one of the most solid contributions made to medicine in America."

During its long history this college has occupied six sites, and is now located at Fifty-Ninth Street and Amsterdam Avenue. The college buildings, together with the Vanderbilt Clinic and Sloane Hospital for Women, form a notable group. Across the street is Roosevelt Hospital, with which it is closely associated. In 1912 an alliance was effected with the Presbyterian Hospital, which permits the scientific and physiologic direction by the college of the medical, surgical and pathologic services of the hospital.

The University and Bellevue Hospital Medical College is the result of the union of two great medical schools. In 1841 a medical school was organized by the New York University. The first faculty was a notable one, but two names stand forth with especial prominence. Valentine Mott was the professor of surgery and John W. Draper professor of chemistry. The school was first located at 659 Broadway. It occupied three other sites until 1875, when a commodious building was erected at 210 East Twenty-Sixth Street, where instruction was continued until 1898. This is the building which the present generation remembers as the University Medical College.

Clinical instruction had been given in Bellevue Hospital by members of the staff since 1847. The clinical facilities were so great that it was felt that a medical school should be connected with the hospital. In 1861 the commissioners of public charities notified the medical board that they would allow a college building to be erected on the hospital grounds. This building was soon erected, and the faculty of the Bellevue Hospital Medical College was formed. It was truly a notable one, and the names of Austin Flint, Lewis A. Sayre, Fordyce Baker, Frank H. Hamilton, James R. Wood, Stephen Smith and J. W. S. Gouley stand out prominently. In 1884, Andrew Carnegie gave a sum of money for the building of a laboratory. This was the first laboratory in this country in which systematic instruction was given to medical students in pathology and bacteriology.

In 1898 these two medical schools consolidated, and the resulting medical school became an integral part of the New York University. A new college building was erected at the corner of First Avenue and Twenty-Sixth Street, and the Carnegie laboratory building became virtually part of the college building. In 1904 a new laboratory building was erected, and in 1910 the Carnegie laboratory was extended.



Above, Academy of Medicine; Below, Hosack Hall.

The Cornell University Medical College is the youngest of the three great medical schools in New York County. It was established in 1898. This undertaking had been contemplated by the trustees for several years, and was made possible by the gift to the university of a commodious and fully equipped building for medical instruction and by an endowment sufficient to maintain generously a vigorous school for higher education in medicine. The main college building occupies the block between Twenty-Seventh and Twenty-Eighth streets on First Avenue, and is directly opposite Bellevue Hospital. It comprises the medical school and dispensary. The Loomis Laboratory on Twenty-Sixth Street is used for undergraduate instruction and as a research laboratory. The first two years of the medical course may be taken at Ithaca, N. Y., the seat of Cornell University. Here, also, special courses preparatory to the study of medicine may be taken. The entrance requirements of Cornell Medical School are very severe. It stands in the first rank among the medical schools of the country.

The Long Island College Hospital was founded in 1857, and has occupied the same building since its founding. In 1887 the Hoagland Laboratory was established, and in 1896 the Polhemus Memorial Clinic was built. It is a handsome building and is amply endowed. The Long Island College is unique in the fact that the head of each college department is also the head of the same department in the hospital and dispensary. The buildings occupy a block on Henry Street between Pacific and Amity streets. It has 500 beds and maintains a large maternity department.

The Fordham University School of Medicine opened its doors in 1905. Fordham University was the name adopted in 1907 to supersede "St. John's College, Fordham." It is under supervision of the Jesuit order. The buildings are situated at the corner of Third Avenue and Fordham Road (One Hundred and Ninetieth Street), Borough of the Bronx.

The New York Homeopathic Medical College and Hospital was founded in 1860. It has occupied four sites, and removed to its present location, Eastern Boulevard and Sixty-Third Street, in 1889. It is closely associated with the Flower Hospital, which was opened for the reception of patients in 1890. It is regarded as being one of the highest type of homeopathic colleges.

The New York Medical School and Hospital for Women is a small homeopathic school situated at 17 West One Hundred and First Street. It was chartered in 1863.

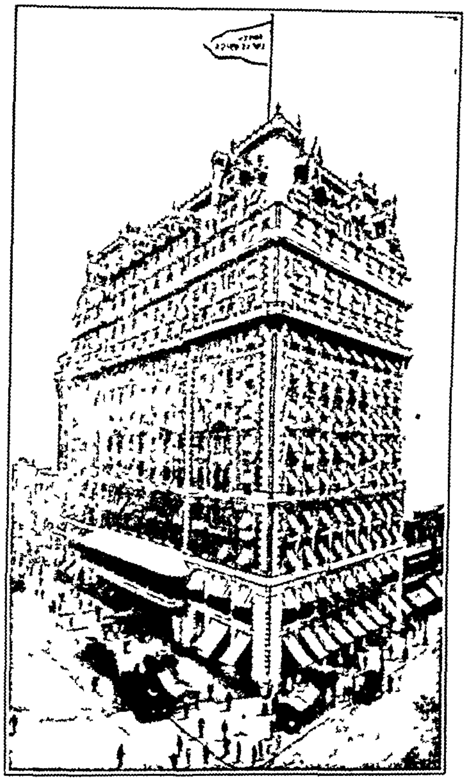
The New York Polyclinic Medical School and Hospital is now located in new and modernly constructed buildings at 341 West Fiftieth Street. The Polyclinic was organized in 1881, and for thirty years was located on East Thirty-Fourth Street. From its inception to the present day, Dr. John A. Wyeth has been its president and moving spirit. In 1912 the present building was occupied at 341 West Fiftieth Street. It is in some regards a new departure in hospital construction, being of the skyscraper type, and utilizes every foot of ground, which in New York is valued by the square inch. Its hospital contains 237 beds, and last year 4,896 patients were treated.

The New York Post-Graduate Medical School and Hospital, at Second Avenue and Twentieth Street, was organized in 1882, and the present building was opened in 1886. Drs. D. B. St. John Roosa and William A. Hammond were moving spirits in its founding. The number of beds is 406, and the number of patients treated annually is over 9,000. As a matter of fact, there are two institutions under one roof. The one is the hospital, already referred to; the other is the school for graduate physicians, with an attendance of over 700 annually. About five years ago the institution received a legacy by means of which its borders have been largely extended.

HOSPITALS

There are 102 hospitals in New York, and a host of dispensaries. Bellevue Hospital is the oldest and largest hospital of the city. It had its beginning in 1736, when a room was set aside in the poorhouse for hospital purposes. It was under the charge of Dr. John Van Beuren, a graduate of Leyden. Three years later a building was erected at the poorhouse by the city as a "Recepticle and Conviency of Such unhappy Poor as are or shall be Visited with any Malignant or Obnoxious disease." In 1794 "Belle Vue place, opposite the third mile stone" was purchased as a site for a quarantine hospital, and later the city hospital was located there. In 1816 the old buildings at Chambers Street were abandoned and two buildings were opened at Belle Vue for hospital purposes, one for male and one for female patients.

During the next forty years Bellevue Hospital was the scene of many epidemics of typhus fever, smallpox, and cholera. In those days there were times when internship meant more certain death than does enlistment in the army today. In a single year (1848) six members of the house staff died from typhus. A year or two later a summer came in which but two members of the staff were able to perform their duties, cholera then being the cause of the epidemic. In the early fifties, typhus, cholera, puerperal fever and erysipelas fairly made a pesthouse of the hospital. As late as 1874 there were within one week thirty-four deaths from puerperal fever. The obstetric service was then moved to Randall's Island, where it has since been conducted. The Emergency Hospital, however, was soon established for precipitate and emergency cases of confinement. For many years there was a special emergency hospital located in Twenty-Sixth Street and was attended by the staff of Bellevue. It is now housed in commodious and ample quarters in one of the new pavilions of the hospital. In 1907, arrangements were completed for the rebuilding by the city of New York of Bellevue at the expense of many million dollars. In the following year two of the new pavilions were opened, and 430 beds were made available for medical and obstetric cases. The pavilion for the city morgue was opened soon after. The morgue is the largest, most complete, and best appointed in the world. The laboratory building is also in use. It is one of the most complete hospital laboratory outfits in the country.


Hotel Knickerbocker.

The training school of Bellevue Hospital was the first training school for nurses in the United States, and has been the model on which most such schools have been organized. In 1896 the city of New York appropriated $628,000 for a new home for nurses. It is situated on East Twenty-Sixth Street opposite the entrance of the hospital, and is a model of its kind. In 1911, women nurses were placed in every ward of the hospital. The Mills school for male nurses was transformed into a school for the education of trained orderlies. A school for the education of midwives was opened in the old Emergency Hospital building. Owing to the large foreign population of New York, midwives are largely employed. Two years ago the capacity of the hospital was 1,379; the visiting staff numbered 101; the house staff, 70; nurses, 336; male attendants, 47; officers and employees, 725.

The City Hospital is located at the southern extremity of Blackwell's Island. It was originally known as Charity Hospital, but out of consideration for the sick poor the name was changed a few years ago. It was organized in 1846 and is managed by the Department of Public Charities. Its bed capacity is about 1,000. The City Hospital School of Nursing was the third school of its sort organized in the country. In connection with the Metropolitan Hospital it maintains at the foot of East Seventieth Street an emergency, relief and ambulance station. In January of this year new operating theaters were opened which are asserted to be the finest in the country, the sterilizing plants being particularly excellent. The City Maternity Hospitals are on Blackwell's Island and are associated with the City Hospital.

Patients with contagious diseases are received only in the hospitals of the department of health, which maintains three great hospitals, the Willard Parker Hospital in Manhattan, the Riverside Hospital on North Brother Island, and the Kingston Avenue Hospital in Brooklyn. The Mintern Hospital, situated near Willard Parker Hospital on East Sixteenth Street, has a large endowment and is designed for the treatment of private patients suffering from diphtheria and scarlet fever. While not a charity hospital, it proves a real charity to strangers in New York whose children are seized with scarlet fever or diphtheria in hotels or in homes of friends.

The oldest of the private hospitals are those maintained by the Society of the New York Hospital. The New York Hospital was organized in 1771. The present buildings on Sixteenth Street were occupied in 1877. The number of beds in the hospital is 270, and the number of bed patients treated annually is about 6,000. The number of outpatients treated is about 16,000 and the number of ambulance calls about 8,000 annually. The Society of the New York Hospital also maintains the House of Relief on Hudson Street and the Convalescent Cottages in White Plains, New York. Of equal importance with the New York Hospital is the Bloomingdale Hospital for mental diseases, widely known for years as Bloomingdale Asylum. It is now located at White Plains, N. Y., and is looked on as a most satisfactory hospital for the insane.

The Memorial Hospital at One Hundred and Sixth Street and Central Park West is largely endowed and occupies remarkably handsome buildings. It is devoted exclusively to the study of cancer and allied diseases.

The New York Lying-In Hospital was founded in 1798. During 1916, 7,451 patients were treated in all departments. The Sloane Hospital on Fifty-Ninth Street is also a large maternity hospital. Among other special hospitals the Manhattan Eye, Ear and Throat Hospital treated last year 9,258 patients in the beds, and 51,920 different patients in the dispensary. The New York Eye and Ear Infirmary is another institution whose patients run into the thousands.

It is impossible to enter on a description of the scores of other hospitals or to refer to them without apparent discrimination. The following figures may be given, however, as showing the work done by a few of the great private hospitals, whose work is of such magnitude that they are popularly regarded as public hospitals. During 1916, Mount Sinai Hospital treated 9,286 bed patients; Roosevelt Hospital, 4,832 patients; St. Luke's Hospital, 7,328; German Hospital, 10,281, and 34,058 in its dispensary; St. Vincent's Hospital, 5,798, and the Methodist Episcopal Hospital (Seney Hospital) in Brooklyn, 4,288.

PREVENTIVE MEDICINE

There are few subjects in which New York City takes greater pride than in the work done in preventive medicine by its department of health. For years the commissioners have been highly equipped scientists and each has done his share in advancing the standard originally set by Herman M. Biggs. The department has instituted many innovations, most of which have long been accepted the country over as legitimate and necessary work of a health department. It is impossible here even to enumerate the activities now daily utilized in New York for the prevention of disease.

TRANSPORTATION TO THE MEETING

Railroad and Pullman Fares to New York City

Those who are going to New York for the Annual Session are urged to consult the local ticket agent at their home town for complete information regarding fares, time limits, extentions and stop-over privileges available in making the trip. There is on file in every ticket office the traffic schedule which officially informs local agents of the rates from that point. Fellows should not leave the determination of the route desired until just before they are ready to start on the trip. Local ticket agents may have to obtain special tickets for these excursions from central points, and they must be arranged in time so that the tickets may be purchased when the journey is begun. These agents will also be able to give information concerning circuit routes which will permit making whatever side trips may be desired in connection with the journey to or from New York. Those from Chicago, St. Louis and the West may purchase short limit summer tourist tickets, which will be on sale to New York City, commencing June 1, at lower fare and with more liberal limit and stop-over privileges than apply in connection with reduced fares authorized for conventions Round trip circle tour tickets, going one route and returning another, are available, sale commencing May 15, to New York and to Boston, in one direction via New York with a choice of many routes: through Niagara Falls, Montreal, Washington, D. C, Baltimore, and Norfolk, Va., including rail and water trips if desired.

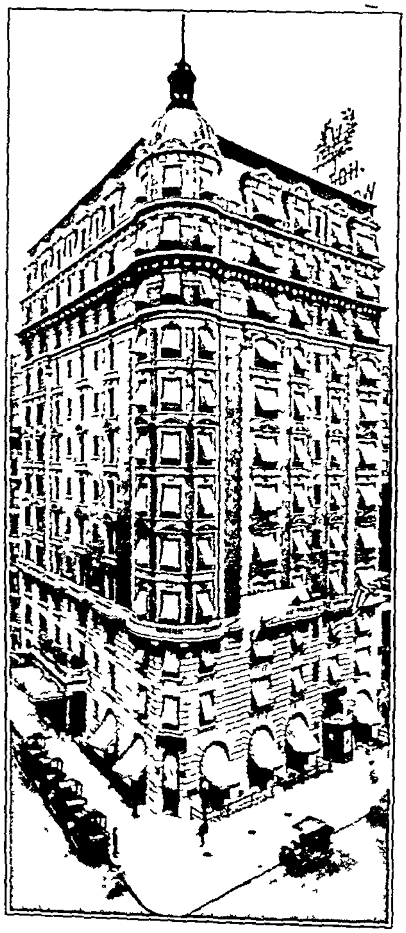
Hotel Plaza.

In order to give a general idea of the fares available, the following round trip railroad fares and one-way Pullman lower berth charges to New York are given. In some instances, these fares are approximated:

	R. R. Fare	Pullman Fare
Buffalo	$16.45	$ 2.00
Chicago	35.00	5.00
Cincinnati	30.10	4.00
Cleveland	22.90	3.00
Columbus, Ohio	25.30	3.50
Dallas, Texas	61.50	10.50
Denver	78.70	11.00
Detroit	26.50	3.50

	R. R. Fare	Pullman Fare
Indianapolis	32.50	5.00
Kansas City, Mo.	51.20	7.50
Louisville, Ky.	34.00	5.00
Milwaukee, Wis.	39.08	5.50
Minneapolis	54.00	7.00
Omaha	59.10	7.50
St. Louis	40.00	6.00
St. Paul	54.00	7.00

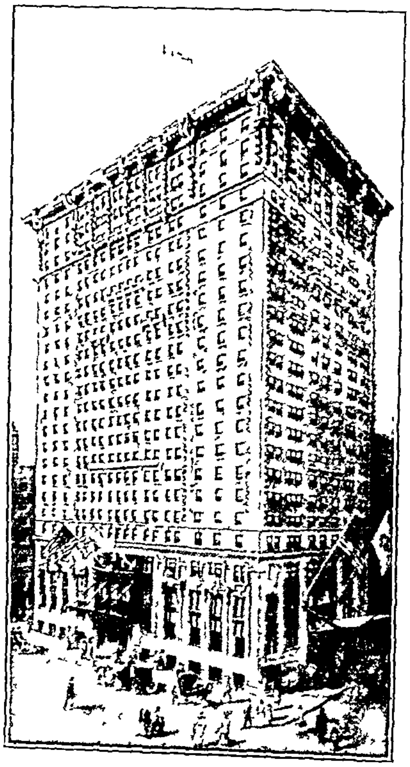
These rates are in accordance with those which have been announced by the various passenger associations listed below:



Hotel Woodward.

Central Passenger Association: Two cents per mile in each direction, but in no case more than summer tourist fares. Signature form of tickets will be sold June 3, 4 and 5, final return limit to reach the original starting point not later than midnight, June 12. A joint tariff authorizing fares for the annual session of the Association from points in the Central Passenger Association territory is now being compiled.

The Trunk Line Association: This serves most of New York, Pennsylvania, New Jersey, Delaware, Maryland and West Virginia, also a part of Virginia, and announces that there will be available for those attending the coming session of the American Medical Association a railroad rate of 2 cents per mile in each direction with a minimum of $1 for the round trip on the certificate plan, going and returning via same route, only. Going tickets in connection with certificates to be sold June 3, 4 and 5 at one-way fares applicable to New York City on the certificate plan. These certificates must be obtained from the ticket agent at the starting point (or nearest station issuing through tickets to New York City) and to be valid for the reduced fares returning, must be endorsed by the secretary of the American Medical Association, indicating that the holder has been in attendance at the meeting and is entitled to the reduction, and must also be validated by a special agent on either June 5, 6 or 7. Return tickets will be sold on presentation of validated certificates June 5-11 at the difference between the fares paid on the going trip and the fares for the round trip; these latter tickets to be limited to continuous passage to destination, which must be reached in no case later than on June 12. No fee will be required for the validation of certificates.



Hotel Belmont.

New England Passenger Association: Two cents per mile in each direction, short line mileage, going and returning via the same route and that one over which one-way tickets are regularly sold, and only from points where regular one-way fare to New York City is over $1. From points on the B & A. and N. Y., N. H & H R. R.'s certificate plan arrangements will be in effect from stations where the one-way fare to New York City is more than $1. Tickets to be sold or certificates issued and good going June 3, 4 and 5, and returning to reach original starting point not later than midnight of June 12. Reductions will not apply via the Bangor & Aroostook R. R., New England Steamship Company, nor Eastern Steamship Corporation (Metropolitan Line).

Western Passenger Association and Southwestern Passenger Association: The members of the Western Passenger Association and Southwestern Passenger Association have not announced any reduced fares; but commencing June 1, 1917, round-trip summer tickets will be on sale to New York from points in the territory of those associations, at lower fares and with more liberal return limit and stop-over privileges than apply in connection with reduced fares authorized for conventions.

American Medical Special Trains

The New York Central Lines will run two trains from Chicago, one via the Michigan Central Railroad, leaving from Twelfth Street and Lake Front, at 5:40 p. m., June 2, arriving Niagara Falls Sunday morning, June 3, where the entire day will be spent visiting various points of interest. Special train will leave Niagara Falls at 7:20 p. m., Sunday, June 3, arriving New York Monday morning at 7:50. To permit those who desire to spend Monday, June 4, on the Hudson River from Albany to New York, a special car will be attached to the "American Medical Special" at Niagara Falls, and will be detached on arrival of the special at Albany, and placed for occupancy until 8 a. m. The other train for the accommodation of those who do not desire to spend the day at the Falls but to arrive at New York the next evening will leave from La Salle Street Station, Chicago, via the New York Central Railroad (Lake Shore) at 5:30 p. m., June 2, arriving New York 5:25 p. m. the next day. These are convenient schedules for those going from Chicago, and provide comfortable connections for those coming from points west of Chicago. These trains will consist of Pullman cars, including drawing-room and compartment cars, club car, observation car with ladies' maid, barber and valet service, and will run on the following schedule: A competent representative of the New York Central Lines will accompany each train to look after details and the comfort of the passengers.

Via Michigan Central

	Central Time
Leave Chicago June 2	5:40 p. m.
Leave Kalamazoo June 2	8:58 p. m.
Leave Battle Creek June 2	9:26 p. m.
Leave Jackson June 2	10:26 p. m.
Leave Detroit June 2	12:11 a. m.
	Eastern Time
Arrive Niagara Falls June 3	6:10 a. m.
Leave Niagara Falls June 3	7:20 p. m.
Arrive Albany June 4	4:00 a. m.
Arrive New York June 4	7:50 a. m.

Via New York Central

	Central Time
Leave Chicago June 2	5:30 p. m.
Leave Toledo June 2	11:15 p. m.
Leave Cleveland June 3	2:00 a. m.
	Eastern Time
Leave Rochester June 3	8:50 a. m.
Leave Syracuse June 3	10:35 a. m.
Leave Utica June 3	11:50 a. m.
Leave Albany June 3	2:05 p. m.
Arrive New York June 3	5:25 p. m.

An extra fare of $5 will be charged on these trains from Chicago and $2 from Cleveland.

Round trip tickets will be on sale to New York at reduced fares from all points on the New York Central Lines. Fares from the principal points will be as follows:

	Round-Trip R. R. Fares: Convention Fare	Round-Trip R. R. Fares: Summer Tourist Fare	One-Way Pullman Fares: Lower	One-Way Pullman Fares: Compt.	One-Way Pullman Fares: Drawing Room
Battle Creek, Mich	$29.25	$31.70	$4.25	$12.00	$15.00
Bay City, Mich	28.00	32.20	4.00	11.50	14.00
Chicago	*	35.00	5.00	14.00	18.00
Cincinnati	30.10	32.00	4.00	11.50	14.00
Cleveland	22.90	.....	3.00	8.50	11.00
Columbus, Ohio	25.30	29.00	3.50	10.00	13.00
Dayton, Ohio	28.10	30.50	4.00	11.50	14.00
Detroit	26.50	30.50	3.50	10.00	13.00
Grand Rapids, Mich	30.55	31.70	4.50	13.00	16.00
Indianapolis	32.50	33.00	5.00	14.00	18.00
Jackson, Mich	27.45	31.70	4.00	11.50	14.00
Kalamazoo, Mich	30.15	31.70	4.50	13.00	16.00
Saginaw, Mich	27.50	31.70	4.00	11.50	14.00
South Bend, Ind	*	31.70	4.50	13.00	16.00
Springfield, Ohio	27.10	30.00	3.50	10.00	13.00
St. Louis	*	40.00	6.00	16.00	21.00
Terre Haute, Ind	35.40	36.60	5.00	14.00	18.00
Toledo, Ohio	26.50	30.50	4.00	11.50	14.00

*Summer tourist fares will apply from these points.

Tickets will be on sale at convention fare, June 2, 3 and 4, final return limit to reach original starting point not later than midnight of June 12, 1917.

Tickets will be on sale at summer tourist fare from June 1 to September 30, final return limit to reach original starting point not later than thirty days from date of sale.

For the convenience of those coming from St. Louis, Indianapolis, Cincinnati, Columbus and the surrounding territory, the Cleveland, Cincinnati, Chicago & St. Louis Railway, "Big Four Route," will run special sleeping cars through to New York as follows, connecting with the foregoing train via the New York Central Railroad at Cleveland:

	Central Time
Leave St. Louis	12:00 noon
Leave Terre Haute	4:23 p. m.
Leave Indianapolis	6:15 p. m.
Arrive Cleveland	1:45 a. m.
Leave Cincinnati	6:05 p. m.
Leave Dayton	7:50 p. m.
Leave Springfield	8:33 p. m.
Leave Columbus	9:55 p. m.
Arrive Cleveland	1:45 a. m.
Leave Cleveland	2:00 a. m.
	Eastern Time
Arrive New York	5:25 p. m.

In addition, the New York Central Lines provide through service to New York as follows:

Via Michigan Central R. R.

	No. 8	No. 10	No. 48	No. 14	No. 36
Leave Chicago, C. T.	a. m. *9:05	a. m. 10:30	†.....	p. m. 3:00	a. m. 12:05
Leave Grand Rapids, C. T.	a. m. 11:05	.....	.....	p. m. 5:10	.....
Leave Saginaw, C. T.	a. m. 11:59	.....	.....	....	.....
Leave Bay City, C. T.	a. m. 11:30	.....	.....	....	.....
Leave Detroit, C. T.	p. m. 3:55	p. m. 6:20	p. m. 6:10	p. m. 10:55	a. m 8:15
Leave Buffalo, E. T.	p. m. 10:35	a. m. 1:15	a. m. 12:01	a. m. 7:40	p. m 7:30
Arrive New York, E. T.	p. m. 9:00	p. m. 3:30	a. m. 9:30	p. m. 8:45	a. m 7:03

* Extra fare Chicago to New York, $5.
† Extra fare Detroit to New York, $2.

Via C. C. C. and St. L.—Big Four Route

	No. 16	No. 20	No. 46
Leave St. Louis, C. T.	8:25 a. m.	5:00 p. m.	12:05 midn.
Leave Terre Haute, C. T.	12:58 p. m.	9:17 p. m.	5:11 a. m.
Leave Indianapolis, C. T.	2:45 p. m.	11:00 p. m.	7:00 a. m
Arrive New York, E. T.	3:45 p. m.	8:00 p. m.	8:00 a. m.

An extra fare of $2 is charged on train No. 20 St. Louis to New York; $2 Terre Haute to New York; $1 Indianapolis to New York.

	No. 46	No. 6	No. 26	No. 42
Lv. Cincinnati, C. T.	8:30 a. m.	12:05 noon	3:00 p. m	12:05 midn.
Lv. Dayton, C. T.	10:10 a. m.	1:25 p. m.	4:23 p. m.	1:40 a. m
Lv. Springfield, C. T.	10:50 a. m.	2:00 p. m.	5:02 p. m.	2:20 a. m.
Lv. Columbus, C. T.	12:00 noon	3:03 p. m.	6:03 p. m.	3:40 a. m.
Ar. New York, E. T.	8:00 a. m.	9:21 a. m.	3:45 p. m.	5:05 a. m.

VIA NEW YORK CENTRAL R. R.

	No. 44	No. 46	No. 6	No. 10	No. 26	No. 16	No. 14	No. 86	No. 90	No. 28
Lv. Chicago C. T.	....	8:25 a. m.	10:25 a. m.	10:30 a. m.	12:40 noon	1:40 p. m.	3:15 p. m.	8:00 p. m.	11:00 p. m.	11:45 p. m.
Lv. Toledo C. T.	....	1:40 p. m.	3:40 p. m.	4:45 p. m.	5:15 p. m.	7:45 p. m.	11:30 p. m.	1:30 a. m.	4:25 a. m.	5:00 a. m.
Lv. Cleveland C. T.	3:00 p. m.	5:00 p. m.	6:20 p. m.	7:45 p. m.	7:35 p. m.	10:35 p. m.	2:35 a. m.	5:55 a. m.	7:30 a. m.	8:00 a. m.
Lv. Buffalo E. T.	9:00 p. m.	10:05 p. m.	....	1:15 a. m.	.....	4:10 a. m.	9:30 a. m.	10:45 a. m.	1:00 p. m.	3:15 p. m.
Ar. New York E. T.	7:50 a. m.	8:00 a. m.	9:21 a. m.	3:30 p. m.	9:40 a. m.	3:45 p. m.	8:45 p. m.	8:00 p. m.	10:10 p. m.	5:05 a. m.

An extra fare is charged to New York on the following trains:

No. 46 from Chicago $6.
No. 6 from Chicago $6. Cleveland $2. Toledo $2.
No. 26 The Twentieth Century Limited. Chicago $8. Toledo $5. Cleveland $3.
No. 16 from Chicago $3.
No. 86 from Chicago $5.
No. 90 from Chicago $6.

Missouri Valley and Southwest Special

Arrangements have been made for a special through train to New York City for those going to New York from the Missouri Valley and the Southwest. This train will run from Dallas and Fort Worth, Texas; Oklahoma City, Wichita, Kansas City and St. Joseph to Chicago, over the Santa Fe railway; from Lincoln, Omaha, Des Moines and intermediate points, over the Illinois Central railway, and from Chicago to New York over the Pennsylvania lines. The service and appointments will be first class and sleepers will be run through to New York without change. Those from this territory, who have enjoyed previous trips to the American Medical Association annual sessions will appreciate the advantage of social intercourse and the opportunities for getting better acquainted on an excursion of this character. Stop-overs at all points, including Chicago, Washington, Philadelphia, Atlantic City, will be given those who desire. The regular low summer rates will be in effect. Those who desire to join this party should make reservations early in order to secure lower berths. This special will leave Kansas City on Saturday evening, June 2, at 8 o'clock. No excess fare charged on this train.

MEETING PLACES AND HOTEL HEADQUARTERS

This list has been compiled from the latest information furnished by the Local Committee on Arrangements.

House of Delegates—Hosack Hall, Academy of Medicine Building, 17 West Forty-Third Street. (B)

General Meeting—The opening meeting of the Scientific Assembly will convene at 8:15 o'clock, Tuesday evening, June 5, instead of at 10 a. m., as at previous sessions.

Scientific Exhibit, Registration Bureau, Commercial Exhibit, Information Bureau and Branch Post-office—Hotel Astor, Times Square. (A)

Sections, Hotel Headquarters and Meeting Places

Practice of Medicine—Biltmore. Biltmore, Supper Room. (C)

Surgery, General and Abdominal—Waldorf-Astoria. Waldorf-Astoria, Grand Ball Room. (F)

Obstetrics, Gynecology and Abdominal Surgery—Waldorf-Astoria. Waldorf-Astoria, Astor Gallery. (F)

Ophthalmology—Astor. Astor, North Ball Room. (A)

Laryngology, Otology and Rhinology—Astor. Astor, East Ball Room. (A)

Diseases of Children—McAlpin. McAlpin, Winter Garden. (E)

Pharmacology and Therapeutics—Manhattan. Manhattan. (D)

Pathology and Physiology—McAlpin. McAlpin, Blue Room. (E)

Stomatology—Astor. Astor, Yacht Room. (A)

Nervous and Mental Diseases — McAlpin. McAlpin, Roof Garden. (E)

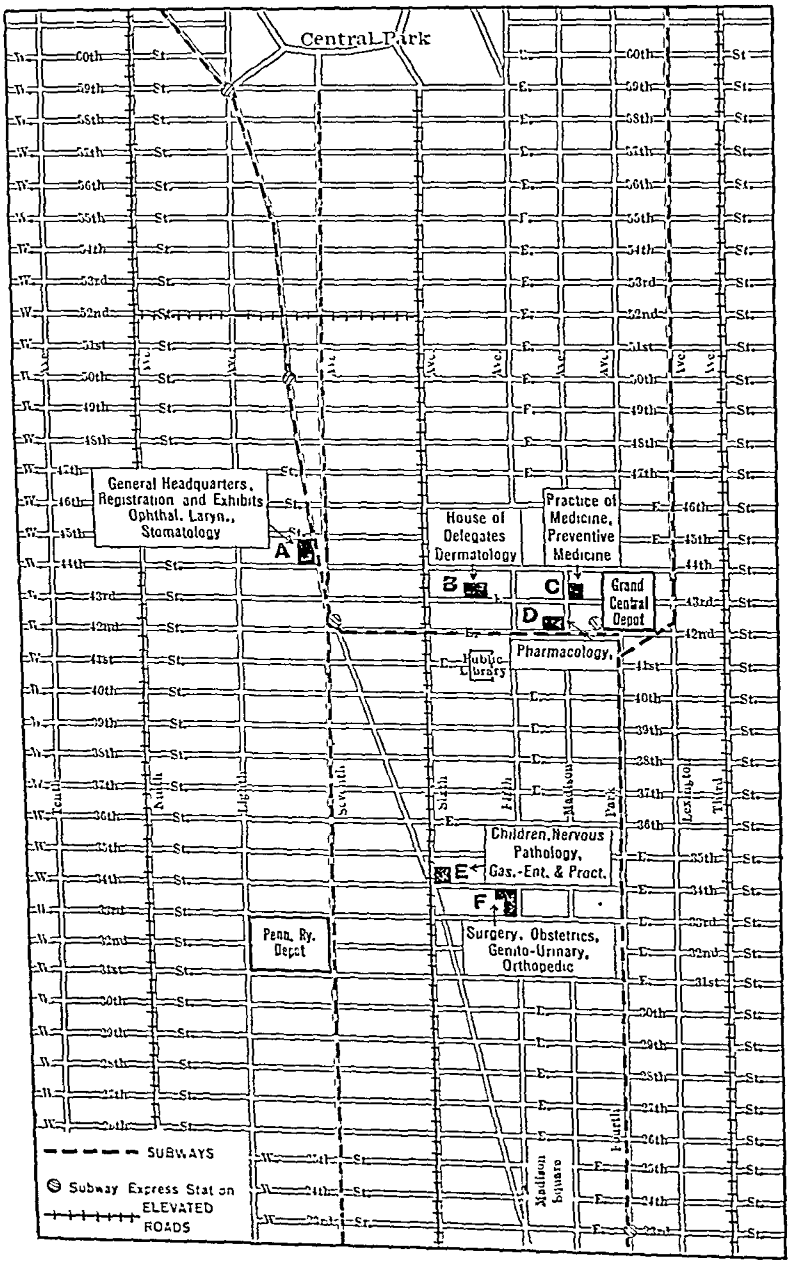
Dermatology—Manhattan. (D) Academy of Medicine, Du Bois Hall. (B)

Preventive Medicine and Public Health—Biltmore. Biltmore, Music Room. (C)

Genito-Urinary Diseases — Waldorf-Astoria. Waldorf-Astoria, Green Room. (F)

Orthopedic Surgery—Waldorf-Astoria. Waldorf-Astoria, Assembly Hall. (F)

Gastro-Enterology and Proctology—McAlpin. McAlpin, Green Room. (E)



HOTEL RESERVATIONS

Although New York can easily accommodate those in attendance on the annual session, hotel reservations should be made early.

The Committee on Arrangements requests that these be made directly with the hotels. In writing for reservations, it is well to state the number of rooms desired for the accommodation of your party, the day you expect to arrive in New York and how long you plan to remain. Also, name the rate you are willing to pay. Those who desire rooms with bath should state whether a tub or a shower is preferred. It will be a great comfort on arriving at New York to go at once to a hotel which is expecting you rather than to make a round of hotels, finding a number of them completely filled and finally being compelled to take the first lodgings which can be found in a hurried personal search. The list appearing in this issue locates the different hotels and gives their rates. Make your selection, write to the manager and take with you to New York his reply assuring you that a reservation has been made for your use. Then, on arriving all you will have to do is to go to that hotel and register.

TABLE OF DAILY RATES AND ACCOMMODATIONS OFFERED BY NEW YORK HOTELS

Hotels, Number of Rooms and Street Addresses	Rooms without Bath				Rooms with Bath				Parlor, Bedroom and Bath or Connecting Rooms for One or More Persons*	
	For One Person		For Two Persons		For One Person		For Two Persons			
Astor—1,000—Times Square General Headquarters; also headquarters of the Sections on Ophthalmology, on Laryngology, Otology and Rhinology and on Stomatology.	$.....	$.....	$.....	$.....	$ 4.00	to $ 6.00	$ 5.00	to $ 8.00	$ 9.00	to $12 00
Biltmore—1,000—Madison Ave. and 43d Headquarters of the Sections on Practice of Medicine, and Preventive Medicine and Public Health	.....	.....	.....	.....	4.00	to 5.00	6.00	to 7.00	.....	.....
Manhattan—700—Madison Ave. and 42d Headquarters of the Sections on Pharmacology and Therapeutics and on Dermatology.	2.50	.....	.....	.....	3.50	to 4.00	5.00	.....	.....	.....
McAlpin—1,600—Broadway and 34th Headquarters of the Sections on Diseases of Children, on Nervous and Mental Diseases, on Pathology and Physiology and on Gastro-Enterology and Proctology.	2.50	to 3.00	3.50	to 4.00	3.00	to 4.00	4.00	to 5.00	6.00	to 8.00
Waldorf-Astoria—1,200—Fifth Ave. and 34th Headquarters of the Sections on Surgery, General and Abdominal; on Obstetrics, Gynecology and Abdominal Surgery; on Genito-Urinary Diseases and on Orthopedic Surgery.	3.00	.....	4.00	.....	4.00	.....	6.00	.....	14.00	.....
Albemarle—525—Broadway and 54th	.....	.....	.....	.....	2.00	.....	3.00	.....	4.00	.....
Albert—450—University Place and 11th	1.00	.....	.....	.....	1.50	.....	.....	.....	.....	.....
Algonquin—250—59 W. 44th	.....	.....	.....	.....	2.50	.....	3.50	.....	5.00	to 6.00
Ansonia—1,600—Broadway and 73d	2.00	.....	3.00	.....	2.50	.....	5.00	.....	6.00	to 10.00
Arlington—175—18 W. 25th: European	1.50	.....	2.50	.....	2.00	.....	3.00	.....	3.00	to 4.00
American	3.00	.....	5.50	.....	3.50	.....	6.00	.....	4.50	to 7.00
Belleclaire—320—Broadway at 77th	.....	.....	.....	.....	2.50	.....	3.50	.....	5.00	to 6.00
Belmont—700—Park Ave. and 42d	2.50	to 3.50	3.50	to 4.50	3.50	to 8.00	4.50	to 9.00	.....	.....
Berkley—300—170 W. 74th	.....	.....	.....	.....	3.00	.....	5.00	.....	.....	.....
Blackstone—300—50 E. 58th	.....	.....	.....	.....	2.50	.....	4.00	.....	5.00	to 6.00
Breslin—500—Broadway and 29th	2.00	to 3.00	4.00	to 5.00	2.50	to 4.00	5.00	to 8.00	.....	.....
Bristol—180—122 W. 49th: European	1.50	.....	2.00	.....	2.00	.....	3.00	.....	4.00	to 6.00
American	3.00	.....	5.00	.....	3.50	.....	6.00	.....	7.00	to 12.00
Broadway Central Hotel—600—Broadway and 3d.	1.00	to 1.50	2.00	.....	2.00	.....	3.00	.....	.....	.....
Broztell—250—Fifth Ave. and 27th	.....	.....	.....	.....	1.50	.....	2.50	.....	.....	.....
Buckingham—260—5th Ave. and 50th	1.50	.....	2.50	.....	2.50	.....	3.50	.....	.....	.....
Calumet—140—340 W. 57th	.....	.....	.....	.....	1.50	.....	2.50	.....	.....	.....
Claridge—250—Broadway and 44th	2.50	.....	3.50	.....	3.00	to 6.00	4.00	to 8.00	8.00	.....
Clendening—230—202 W. 103d	.....	.....	.....	.....	1.50	to 3.00	2.00	to 3.00	.....	.....
Collingwood—250—45 W. 35th	1.50	.....	2.00	.....	2.50	.....	3.00	to 3.50	5.00	to 7.50
Colonial—300—81st St. and Manhattan Sq	1.50	.....	.....	.....	2.00	.....	.....	.....	.....	.....
Continental—300—Broadway and 41st	.....	.....	.....	.....	2.00	to 3.00	3.00	to 4.00	.....	.....
Cumberland—250—Broadway at 54th	1.50	to 2.00	2.50	to 3.00	2.00	to 2.50	3.00	to 3.50	4.00	to 5.00
Devon—200—70 West 55th	.....	.....	.....	.....	3.00	.....	5.00	.....	5.00	to 6.00
Earle—150—103 Waverly Pl.: European	.....	.....	.....	.....	2.00	.....	3.00	.....	4.00	to 5.00
American	.....	.....	.....	.....	3.50	.....	5.00	.....	6.00	to 7.00
Endicott—600—Columbus Ave. and 81st	1.00	to 1.50	2.00	to 2.50	1.50	to 3.50	250	to 5.00	.....	.....
Flanders—300—135 W. 47th	.....	.....	.....	.....	1.50	to 2.50	2.50	to 3.00	3.50	to 4.00
Fourteen East 60th—350	.....	.....	.....	.....	3.00	to 4.00	3.00	to 4.00	8.00	.....
Gotham—400—Fifth Ave. and 55th	.....	.....	.....	.....	4.00	to 5.00	5.00	to 8.00	.....	.....
Great Northern—400—118 W. 57th	.....	.....	.....	.....	2.50	to 3.00	3.50	to 4.00	5.00	to 7.00
Hargrave—300—110 West 72d	.....	.....	.....	.....	2.00	.....	2.50	.....	.....	.....
Herald Square—310—114 W. 34th	1.50	.....	.....	.....	2.00	.....	.....	.....	5.00	.....
Hermitage—250—Seventh Ave. and 42d	1.50	to 2.00	2.50	to 3.00	2.00	to 3.00	3.50	to 5.00	.....	.....
Holland House—350—5th Ave. and 30th	.....	.....	.....	.....	3.00	.....	4.00	.....	5.00	to 8.00
Holley—200—Washington Sq. W.: European	.....	.....	.....	.....	1.50	.....	2.50	.....	.....	.....
American	.....	.....	.....	.....	3.00	.....	5.00	.....	.....	.....
Imperial—800—Broadway and 32d	2.00	.....	3.00	.....	2.50	to 3.00	4.00	.....	5.00	.....
Judson—200—53 Washington Sq.: European	1.00	.....	2.00	.....	1.50	.....	2.50	.....	.....	.....
American	2.50	.....	5.00	.....	3.00	.....	6.00	.....	.....	.....
Knickerbocker—600—Broadway and 42d	2.50	.....	4.00	.....	3.50	.....	5.00	to 8.00	.....	.....
Laurelton—150—145 W. 55th	.....	.....	.....	.....	2.00	.....	3.00	.....	.....	.....
Le Marquis—170—12 E. 31st: European	1.50	.....	2.00	.....	2.00	.....	3.00	.....	.....	.....
American	3.00	.....	5.00	...	3.50	.....	6.50	.....	.....	.....
Leonori—225—Madison Ave. and 63d	1.50	.....	.....	.....	.....	.....	3.00	.....	5.00	to 10.00
Longacre—250—157 West 47th	1.00	.....	.....	.....	1.50	to 2.50	.....	.....	.....	.....
Lucerne—300—201 W. 79th	.....	.....	.....	.....	1.50	.....	2.00	.....	.....	.....
Madison Square—200—37 Madison Sq.	.....	.....	.....	.....	2.00	.....	3.00	to 3.50	4.00	to 8.00
Majestic—700—W. 72d at Central Park	2.00	.....	3.00	.....	2.50	.....	4.00	.....	6.00	to 8.00
Manhattan Square—300—50 W. 77th	.....	.....	.....	.....	2.50	.....	3.00	.....	3.50	to 10.00
Margaret—200—97 Columbia Heights, Brooklyn	1.00	.....	.....	.....	2.00	.....	.....	.....	3.00	.....
Marie Antoinette—500—Broadway and 66th	2.00	.....	4.00	.....	3.00	.....	5.00	.....	8.00	.....
Marlton—150—3 W. 8th	1.00	to 2.00	2.00	to 3.00	2.00	to 3.00	3.00	to 4.00	.....	.....
Martha Washington—425—29 E. 29th (women only)	1.50	.....	2.50	.....	3.00	....	4.00	.....	.....	.....
Martinique—625—Broadway and 32d	2.00	.....	3.00	.....	2.50	.....	3.50	.....	6.00	.....
Murray Hill—600—Park Ave. and 40th	2.00	.....	3.00	.....	3.00	.....	4.00	.....	5.50	to 7.50
Nassau—500—Long Beach	.....	.....	.....	.....	4.00	to 5.00	5.00	to 8.00	.....	.....
Netherland—400—Fifth Ave. and 59th	1.50	to 2.00	.....	.....	2.00	to 4.00	3.50	to 5.00	.....	.....
New Grand—400—Broadway and 31st	1.00	.....	.....	.....	1.50	.....	.....	.....	.....	.....
Park Avenue—430—Park Ave. and 32d	1.50	to 2.00	2.50	to 4.00	3.00	.....	4.00	to 5.00	.....	.....
Plaza—750—5th Ave. and 58th	.....	.....	.....	.....	4.00	to 5.00	6.00	to 7.00	7.00	to 10.00
Prince George—750—5th Ave. and 28th	.....	.....	.....	.....	2.50	.....	4.00	.....	.....	.....
Ritz-Carlton—425—Madison Ave. and 46th	.....	.....	.....	.....	5.00	.....	7.00	to 10.00	.....	.....
Rutledge—250—Lexington and 30th (women only):										
European	1.00	.....	2.00	.....	1.50	.....	2.50	.....	.....	.....
American	2.50	.....	5.00	.....	3.00	.....	6.00	.....	.....	.....
St. Denis—250—Broadway and 11th	1.00	.....	2.00	.....	2.00	.....	3.00	.....	.....	.....
St. Margaret—130—129 W. 47th	1.00	.....	.....	.....	1.50	.....	.....	.....	3.50	.....
St. Paul—225—50th St. and Columbus Ave	1.00	.....	2.00	.....	2.00	.....	3.00	.....	.....	.....
St. Regis—340—Fifth Ave. and 55th	4.00	.....	5.00	.....	5.00	to 6.00	6.00	to 10.00	.....	.....
San Remo—600—Central Pk. W. and 74th	.....	.....	.....	.....	2.00	.....	2.50	.....	4.00	to 5.00
Seville—475—Madison Ave. and 29th	1.50	.....	2.50	.....	2.50	.....	3.00	.....	.....	.....
Sherman Square—500—Broadway and 70th	.....	.....	.....	.....	2.00	to 2 50	.....	.....	.....	.....
Somerset—225—150 W. 47th	2.00	.....	3.00	.....	.....	.....	.....	.....	4.00	.....
Union Square—130—15th St. and 4th Ave.	1.50	to 2.00	3.00	to 4.00	.....	.....	.....	.....	4.00	to 7.00
Vanderbilt—600—34th St. and Park Ave	.....	.....	.....	.....	3.00	.....	5.00	.....	.....	.....
Van Rensselaer—200—11th St. near 5th Ave:										
European	.....	.....	.....	.....	1.50	.....	2.00	.....	2.50	to 3.00
American	.....	.....	.....	.....	3.00	.....	5.00	.....	6.00	to 8.00
Wallick—400—Broadway and 43d	1.50	to 2.00	2.50	to 3.00	2.00	to 3.00	4.00	to 6.00	.....	.....
Webster—160—40 W. 45th	.....	.....	.....	.....	2.50	.....	3.50	.....	4.00	.....
Willard—130—252 W. 76th	.....	.....	.....	.....	1.50	.....	2.00	.....	.....	.....
Wolcott—300—31st St. and Fifth Ave	2.00	.....	.....	.....	2.50	.....	5.00	.....	.....	.....
Woodstock—365—43d St. near Broadway	2.00	.....	3 00	.....	2.50	.....	3.50	.....	5.00	to 8.00
Woodward—400—Broadway and 55th	1.50	.....	.....	.....	2.00	.....	3.00	.....	4.00	.....
York—250—Seventh Ave. and 36th	1.50	to 2.00	2.50	to 3.00	2.00	to 3.00	3.50	to 5 00	.....	.....

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* For definite information concerning accommodations offered and rates, write to the hotels.

REGISTRATION

The Importance of Registering Early—A Few Suggestions Which Will Facilitate Registration

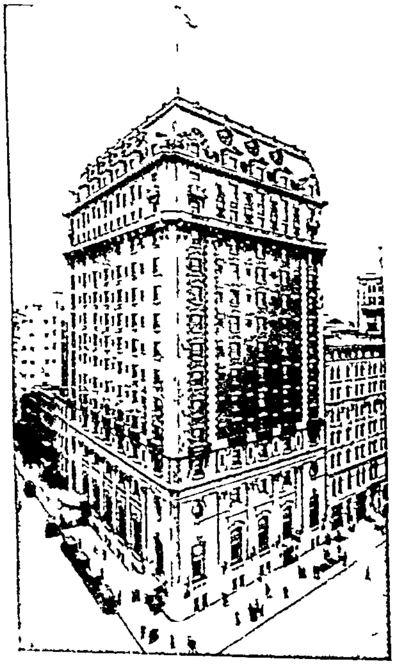
The Bureau of Registration will be located in the Grand Ball Room, Hotel Astor, Broadway, Forty-Fourth and Forty-Fifth Streets. A committee of local physicians will assist those desiring to register. A branch postoffice will be opened, and a bureau of information established in connection with the Registration Bureau.

Every one who registers will be required to fill out completely, except the blank space for the number, the spaces on both parts of the double registration cards, which will be found on the tables in front of the Registration Bureau. These entries should be written very plainly, or printed, as the cards are given to the printer to use as "copy" for the *Daily Bulletin*.

1. Fellows who have their pocket cards with them can be registered with little or no delay. They should present the filled out registration card, together with their pocket card, at one of the windows marked "Registration by Pocket Card." There the clerk will compare the two cards, stamp the pocket card and return it, and supply the Fellow with a copy of the official program and other printed matter of interest to those attending the annual session.

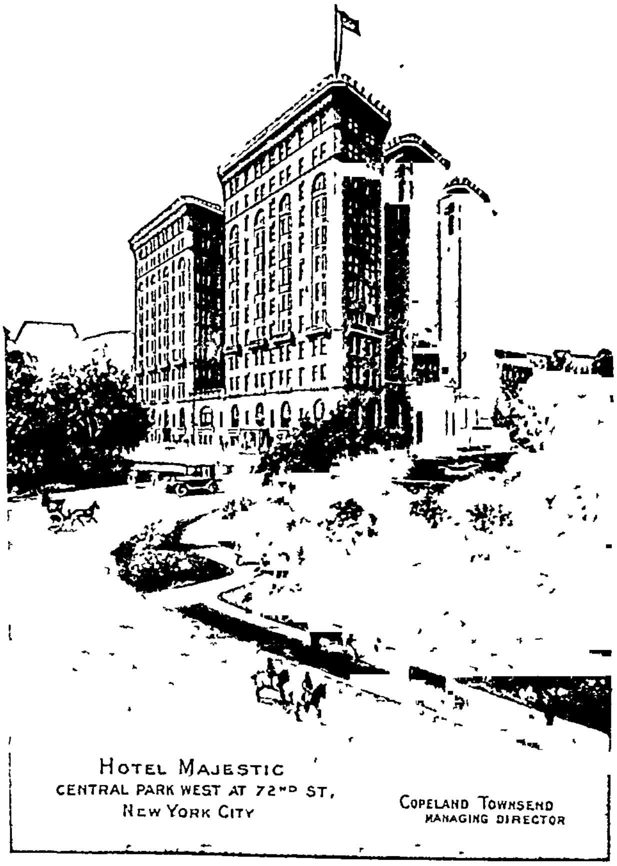
2. Those Fellows who have forgotten their pocket cards should present the filled in registration card at the window marked "Paid—No Card." The work of registration at this window will be conducted as rapidly as possible; but the necessity of finding the Fellow's name on the Fellowship roster will occupy time and will occasion inconvenience to those who neglect to bring their pocket cards with them.

3. The Fellow whose 1917 dues are unpaid should present his filled in registration card with the amount of his Fellowship dues ($5) at one of the windows marked "Cash." Here, too, there will be occasioned some delay; but the work of registering will be conducted as promptly as possible.



Hotel Claridge

4. Subscribers and others desiring to qualify as Fellows should present a filled in registration card, together with a formal application for Fellowship at the window marked "New Fellows." These applications for Fellowship can be obtained at Window No. 1 of the Registration Bureau or from the members of the Committee on Registration. In order to qualify as a Fellow, the applicant must be officially reported as a member of the constituent association of the state in which he resides, and in addition to filing this formal application, he must pay his annual Fellowship dues for the current year; if already a subscriber to THE JOURNAL, with his subscription paid for a term to or beyond Jan. 1, 1918, no additional payment is necessary. If subscription is not paid in full for the current year, the payment of a sum to extend it to Jan. 1, 1918, is required.



The registration of new Fellows will be greatly facilitated if they will provide themselves with certificates of membership issued by the secretary of their state association, certifying to their membership in the state and county branches of the organization.

It will assist in registering if those who desire to qualify as Fellows will file their applications and qualify as Fellows by writing directly to the American Medical Association, 535 North Dearborn Street, Chicago, so that their Fellowship may be entered not later than May 25. Any applications received later than May 25 will be given prompt attention, but the Fellowship certificate and pocket card may not reach the applicant in time so that he can use this card in registering at the New York session, and he may be required to make a second payment of his Fellowship dues, which must be held until the records at headquarters can be consulted after the close of the session, when any excess payment will be adjusted.

If, however, a member of the Association neglects to qualify as a Fellow before reaching New York, he may be entered as a Fellow at the meeting, as suggested above.

POSTOFFICE

An Association Postoffice will be maintained at the Registration Bureau in the Grand Ball Room, Hotel Astor, Broadway, Forty-Fourth and Forty-Fifth Streets. Guests are requested to order mail addressed to them "Care American Medical Association, Hotel Astor, New York City," or to their hotels, as preferred.

THE SCIENTIFIC EXHIBIT

The Scientific Exhibit will be housed in the Belvedere, the summer roof garden of the Hotel Astor. This room, over 200 feet long, is located on the roof of the hotel and is constructed almost entirely of glass, having glass sides and roof. Being admirably located, it promises to be a favorite gathering place for the members during the session. Direct elevator service connects the Belvedere with the main lobby of the hotel and with the Ball Room, in which will be located the Registration Office and the Commercial Exhibit.

The Roentgen-ray exhibit will be in the form of projections from lantern slides. A special room for this purpose has been secured.

The exhibits give promise of being fully up to the standard of previous years. Among those offering exhibits this year are:

Association for the Prevention and Relief of Heart Disease, New York, an exhibit on heart work—charts, placards, folders, etc.

Dr. George A. Baitsell, New Haven, Conn., an exhibit on fibrous tissue in wound healing.

Bellevue Hospital, New York, museum exhibit.

Beth Israel Hospital, New York, an exhibit on pathology and bacteriology.

Hospital Social Service, New York, an exhibit on hospital social service.

Dr. Edward B. Krumbhaar, Philadelphia, an exhibit on electrocardiographic records; charts, specimens, etc., of experimental trypanosomiasis.

Dr. Mary R. Lawson, New London, Conn., exhibit on malarial parasites.

Dr. John H. Larkin, New York, rare and unusual pathologic lesions (mounted museum specimens).

Marion County (Ind.) Medical Society, bronze mural tablet memorial to John Stough Bobbs.

Mayo Clinic, Rochester, Minn.

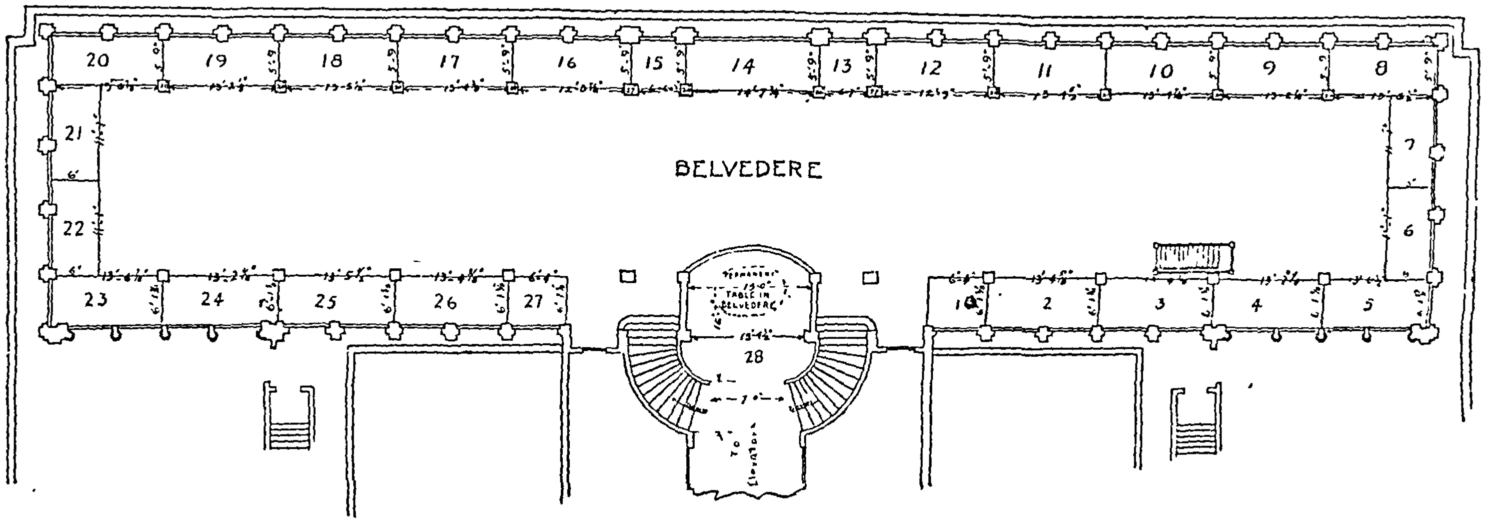
New York Health Department, Albany, N. Y., wall exhibits and models on child welfare, rural sanitation, tuberculosis, adult life diseases, and milk.

Dr. B. S. Oppenheimer, New York, exhibit on the cardiovascular system.

Dr. C. W. Perkins, New York, Roentgen-ray plates.

Dr. Herman B. Philips, New York, an exhibit on new apparatus for continuous drainage of empyemas.

Dr. Edward Reynolds, Boston, forty photomicrographs on sterility.



The Belvedere: Scene of the Scientific Exhibit.

Dr. Joseph C. Bloodgood, Baltimore, an exhibit on cancer.

Dr. James T. Case, Battle Creek, Mich., roentgenologic studies on colon physiology.

Dr. William M. L. Coplin, Philadelphia, a collection of hypoplastic kidneys.

Dr. A. W. Crane, Kalamazoo, Mich., an exhibit on the roentgenocardiograph.

Department of Anatomy, University and Bellevue Hospital, Medical College, New York, casts of human abdominal pelvic and thoracic viscera.

Dr. Robert L. Dickinson, Brooklyn, an exhibit of charts on hospital organization.

Dr. Edward Evans, La Crosse, Wis., bronze plaque for new operating room, St. Francis Hospital, La Crosse, Wis.

Dr. Henry W. Frauenthal, Hospital for Deformities and Joint Diseases, New York, exhibit of colored photographs, types of apparatus and demonstration of method of treatment in cases of infantile paralysis.

Dr. P. M. Hickey, Detroit, roentgenograms of the lower spine.

Dr. Arthur F. Holding, N. Y., lantern slides illustrating precancerous conditions before and after treatment, superficial cancerous conditions before and after treatment, and deep cancerous conditions before and after treatment.

Dr. J. Holinger, Chicago, microscopic exhibit on deformities of the ear.

Dr. J. Shelton Horsley, Richmond, Va., illustrations of original surgical procedures.

Dr. Paul Roth, Battle Creek, Mich., an exhibit on various methods of estimating alveolar carbon dioxid tension.

Dr. J. Morris Slemons, New Haven, Conn., an exhibit on placental pathology.

Dr. Torald Sollmann, Cleveland, an exhibit of paraffin bandages.

Dr. Edmond Souchon, New Orleans, a dissection of the muscles and arteries of the head and neck.

Dr. Alfred A. Strauss, Chicago, charts and specimens illustrating: 1. Pylorectomy by submucous fascial transplant method. 2. Reconstruction of the pylorus by fascial transplants after resection for ulcer.

Dr. R. J. Terry, St. Louis, an exhibit on heredity, development, hypophysis and cleidocranial dysostosis.

MEETINGS OF NONAFFILIATED ORGANIZATIONS

The following medical societies are listed to hold their annual conventions and congresses in New York preceding the Scientific Assembly of the American Medical Association: American Academy of Medicine, June 4-5; American Association of Anesthetists, June 2; American Association of Industrial Physicians and Surgeons, June 4; American Medico-Psychological Association, May 29-June 1; American Proctologic Society, June 4-5; American Radium Society, June 4; American Society of Tropical Medicine, June 4-5; American Therapeutic Society, June 1-2.

PRELIMINARY PROGRAM OF THE SCIENTIFIC ASSEMBLY

THE PROGRAMS OF THE SECTIONS

Outline of the Scientic Proceedings—The Preliminary Program and the Official Program

The following papers are announced to be read before the various sections. The order here is not necessarily the order which will be followed in the Official Program nor is the list complete. The Official Program will be a pamphlet similar to those issued in previous years, and will contain the final program of each section with abstracts of the papers, also lists of committees, programs of the General Meeting and of the meetings of the House of Delegates, lists of entertainments, map of New York and other information. To prevent misunderstandings and to protect the interest of advertisers, it is here announced that this Official Program will contain no advertisements. It is copyrighted by the American Medical Association and will not be distributed before the session. A copy will be given to each member on registration.

SECTION ON PRACTICE OF MEDICINE

MEETS IN SUPPER ROOM, HOTEL BILTMORE

OFFICERS OF SECTION

Chairman—Henry A. Cristian, Boston.
Vice Chairman—Douglas Vanderhoof, Richmond, Va.
Secretary—James S. McLester, Birmingham, Ala.
Executive Committee—Charles Lyman Greene, St. Paul; Thomas McCrae, Philadelphia; Roger S. Morris, Cincinnati.
(Stenographer—Dr. E. Franklin Smith, Richmond Hill, L. I., N. Y.)

Wednesday, June 6—9 a. m.

1. Chairman's Address: Visceral Disturbances in Patients with Cutaneous Lesions of the Erythema Group.
Henry A. Christian, Boston.
2 Clinical Manifestations of Gallbladder Disease. A Study of 1,000 Cases. Frank Smithies, Chicago.
Discussion to be opened by Richard C. Cabot, Boston, and David Riesman, Philadelphia.
3. Dilated Duodenum, with Especial Reference to Chronic Duodenal Obstruction in Visceroptosis.
Douglas Vanderhoof, Richmond, Va.
Discussion to be opened by Lewis A. Conner, New York, and Thomas R. Brown, Baltimore.
4. Clinical Features of Prolonged and Severe Secondary Anemia. Alfred Stengel, Philadelphia.
5. Methods and Results in the Treatment of Pernicious Anemia. Lewellys F. Barker, Baltimore.
Discussion to be opened by Henry A. Christian, Boston, and George Dock, St. Louis.
6. A Clinical and Experimental Study of a Lymphoid Splenomegaly With and Without Leukemia.
Kenneth M. Lynch, Charleston, S. C.
Discussion to be opened by Alfred Stengel, Philadelphia, and William G. MacCallum, New York.

Wednesday, June 6—2 p. m.

7. The Vegetative Nervous System in Pulmonary Tuberculosis. Francis M. Pottenger, Monrovia, Calif.
Discussion to be opened by Smith Ely Jelliffe, New York, and Frank Smithies, Chicago.
8. The Value of Prolonged Rest in the Treatment of Pulmonary Tuberculosis. Joseph H. Pratt, Boston.
Discussion to be opened by Lewis J. Moorman, Oklahoma City.
9. Report of Studies Concerning Acute Lobar Pneumonia.
Rufus I. Cole, New York.
Discussion to be opened by Lawrence Litchfield, Pittsburgh, and David Bovaird, New York.
10. Studies on the Cause and Treatment of Bronchial Asthma.
I. Chandler Walker, Boston.
Discussion to be opened by Robert H. Babcock, Chicago, and Warfield T. Longcope, New York.
11. Botulism: A Clinical and Experimental Study.
Ernest C. Dickson, San Francisco.

Thursday, June 7—9 a. m.

12. Cough Dilatation and Timing of Cough Dilatation: A Functional Heart Test.
I. Birney Guthrie, New Orleans.
13. Studies of the Heart's Functional Capacity.
Theodore B. Barringer, Jr., New York.
Discussion to be opened by T. Stuart Hart and Bernard S. Oppenheimer, New York.
14. A Study of Arterial Sounds.
Stewart R. Roberts, Atlanta, Ga.
Discussion to be opened by William S. Thayer, Baltimore, and George Dock, St. Louis.
15. The Vital Capacity of the Lungs and Its Relation to the Clinical Condition in Heart Disease.
Charles W. McClure and Francis W. Peabody, Boston.
Discussion to be opened by Joseph H. Pratt, Boston, and Charles F. Hoover, Cleveland.
16. The Percussion and Roentgen-Ray Findings After Injections of the Pericardium.
Roger S. Morris and Ellis R. Bader, Cincinnati.
Discussion to be opened by William S. Thayer, Baltimore.
17. A Clinical Study of 200 Cases of Angina Pectoris.
James B. Herrick, Chicago.
Discussion to be opened by Theodore C. Janeway, Baltimore, and Joseph L. Miller, Chicago.
18. Electrocardiographic Changes Associated with Myocardial Involvement, with Special Reference to Prognosis.
Bernard S. Oppenheimer and Marcus A. Rothschild, New York.
Discussion to be opened by William G. MacCallum and Horatio B. Williams, New York.

Thursday, June 7—2 p. m.

Election of Officers

19. The Blood Lipoids in Diabetes.
Elliott P. Joslin, W. R. Bloor and Horace Gray, Boston.
Discussion to be opened by Reginald Fitz, New York.
20. The Influence of the High Calory Diet on the Course of Typhoid Fever. Warren Coleman, New York.
Discussion to be opened by Eugene F. DuBois, New York, and Dudley D. Roberts, Brooklyn.
21. A Study of Chronic Arthritis. Frank Billings, Chicago.
22. Gastric Crises of Spinal Syphilis: A Clinical and Laboratory Study of Four Cases.
B. B. Vincent Lyon, Philadelphia.
Discussion to be opened by Joseph Sailer and David Riesman, Philadelphia.

Friday, June 8—9 a. m.

23. Bence-Jones Proteinuria: The Frequency of Its Occurrence, the Criteria of Its Presence, and Its Possible Relationship to Nephritis with Hypertension.
Sydney R. Miller and Walter A. Baetjer, Baltimore.
Discussion to be opened by L. F. Barker, Baltimore.
24. The Dietetic Treatment of Nephritis, Controlled by the Chemical Examination of the Blood.
Arthur F. Chace and A. R. Rose, New York.
Discussion to be opened by Herman O. Mosenthal, Baltimore, and Eugene F. Du Bois, New York.
25. Nephritis from the Standpoint of Urea Excretion.
Franklin C. McLean, New York.
Discussion to be opened by Henry A. Christian, Boston, and Warfield T. Longcope, New York.
26. Nature and Treatment of Chronic Parenchymatous Nephritis (Nephrosis). Albert A. Epstein, New York.
Discussion to be opened by Nathan E. Brill and Victor C. Myers, New York.
27. The Application of Indirect Colorimetry in the Clinic.
Walter M. Boothby, Rochester, Minn.
Discussion to be opened by E. F. Du Bois, New York.

SECTION ON SURGERY, GENERAL AND ABDOMINAL

MEETS IN GRAND BALL ROOM, WALDORF-ASTORIA

OFFICERS OF SECTION

Chairman—William D. Haggard, Nashville, Tenn.
Vice Chairman—Arthur A. Law, Minneapolis.
Secretary—Eugene H. Pool, New York.
Executive Committee—Charles H. Frazier, Philadelphia; Charles H. Peck, New York; E. Wyllys Andrews, Chicago.
(Stenographer—Mrs. M. C. Repp, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address: Surgery of the Spleen.
   William D. Haggard,[1] Nashville, Tenn.
2. The Problem of Unnecessary Operations and of Incompetent Surgeons. Arthur Dean Bevan, Chicago.
   Discussion to be opened by J. M. T. Finney, Baltimore, and George E. Brewer, New York.
3. The Surgical Significance of Gastric Hemorrhage.
   Donald C. Balfour, Rochester, Minn.
   Discussion to be opened by Charles L. Scudder, Boston.
4. Modification in the Technic of Major Gastric Surgery.
   Lewis L. McArthur, Chicago.
   Discussion to be opened by John B. Deaver, Philadelphia.
5. Intravisceral and Intra-Abdominal Pressure.
   Robert C. Coffey, Portland, Ore.
   Discussion to be opened by Edward Martin, Philadelphia.
6. A New Operation for Floating Kidney.
   Willard Bartlett, St. Louis.
   Discussion to be opened by Hubert A. Royster, Raleigh, N. C.

Wednesday, June 6—2 p. m.

7. Artificial Respiration. George E. Fell, Chicago.
   Discussion to be opened by Albert J. Ochsner, Chicago, and Walter M. Boothby, Boston.
8. Clinical and Experimental Data in Relation to Fat Transplantation. Allen B. Kanavel, Chicago.
   Discussion to be opened by Alexius McGlannan, Baltimore.
9. The Abortive Treatment of Infection.
   William S. O'N. Sherman, Pittsburgh.
   Discussion to be opened by Charles L. Gibson, New York, and George W. Hawley, Bridgeport, Conn.
10. The Evolution of Cancer of the Breast.
    Parker Syms, New York.
    Discussion to be opened by Daniel N. Eisendrath, Chicago, and Homer Gage, Worcester, Mass.
11. Absorbable Metal Clips for Buried Sutures and Ligatures, and Special Alloy for Rapid Absorption.
    E. Wyllys Andrews, Chicago.
    Discussion to be opened by Rudolph Matas, New Orleans.
12. The Closure of Cleft Palate: A Technic and the Reasons for It. Harry M. Sherman, San Francisco.
    Discussion to be opened by Vilray P. Blair, St. Louis.

Thursday, June 7—9 a. m.

13. The Rectangular Flap Incision for Operations Within the Upper Abdomen. Willy Meyer, New York.
    Discussion to be opened by Fred T. Murphy, St. Louis.
14. Advantages of the End-Result System to Surgical Science.
    Ernest A. Codman, Boston.
    Discussion to be opened by Robert L. Dickinson, Brooklyn.
15. The Diagnosis of Acute Pancreatitis, with Report of Thirty-Three Cases. William Linder, Brooklyn.
    Discussion to be opened by Joseph Ransohoff, Cincinnati.
16. Surgery of Bones and Joints, with Especial Reference to the Open Operative Treatment of Fractures, and a Method of Arthroplasty in Ankylosis of the Elbow Joint (Lantern Demonstration).
    Hugh McKenna, Chicago.
    Discussion to be opened by Philip H. K. Kreuscher, Chicago.
17. Results of Treatment of Osteomyelitis.
    Malvern B. Clopton, St. Louis.
    Discussion to be opened by Edward H. Nichols, Boston.
18. Gunshot Fractures. J. Rilus Eastman, Indianapolis.
    Discussion to be opened by Edgar L. Gilcreest, Dallas, Texas.

Thursday, June 7—2 p. m.

Election of Officers

SYMPOSIUM ON THE THYROID GLAND

19. Choice of Method in Operations on the Pituitary Body.
    Charles H. Frazier, Philadelphia.
20. Studies in Experimental Hyperthyroidism.
    E. C. Kendall, Rochester, Minn.
21. Graves' Disease.
    George W. Crile, Cleveland.
22. Constitutional Disturbances Which Come with Chronic Goiter. Charles N. Dowd, New York.
    Discussion on the Thyroid Gland to be opened by Harvey Cushing, Boston, and Lewellys F. Barker and William S. Halstead, Baltimore.
23. Malignant Neoplasm of the Thyroid with Metastases in the Intestine and in Bone.
    John F. Binnie, Kansas City, Mo.
    Discussion to be opened by James E. Thompson, Galveston, Texas.
24. Tumor of the Intercarotid Body.
    Fred B. Lund, Boston.
    Discussion to be opened by Stanley Stillman, San Francisco.

Friday, June 8—9 a. m.

25. Sodium Citrate Blood Transfusion: A Comparison.
    Bertram M. Bernheim, Baltimore.
    Discussion to be opened by George I. Miller, Brooklyn, and Richard Lewisohn, New York.
26. The Resection of Lobes of the Lung.
    Samuel Robinson, Rochester, Minn.
    Discussion to be opened by Howard Lilienthal, New York.

JOINT MEETING WITH SECTION ON PATHOLOGY AND PHYSIOLOGY

27. Anesthesia in the Curriculum and Clinic.
    Willis D. Gatch, Indianapolis.
    Discussion to be opened by Arthur Dean Bevan, Chicago.
28. Pathologic Pulmonary Changes from Endotracheal Insufflation Anesthesia in Experimental Lung Surgery (Lantern Demonstration).
    Conrad Georg, Jr., Ann Arbor, Mich.
    Discussion to be opened by Willy Meyer and Charles H. Peck, New York.
29. Shock During General Anesthesia.
    Frank C. Mann, Rochester, Minn.
    Discussion to be opened by J. Frank Corbett, Minneapolis.
30. Toxic Factors of Some of the Common Anesthetic Substances. Evarts A. Graham, Mason City, Iowa.
    Discussion to be opened by James J. Hogan, Vallejo, Calif.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

MEETS IN ASTOR GALLERY, WALDORF-ASTORIA

OFFICERS OF SECTION

Chairman—H. W. Longyear, Detroit.
Vice Chairman—Howard C. Taylor, New York.
Secretary—Brooke M. Anspach, Philadelphia.
Executive Committee—E. Gustav Zinke, Cincinnati; Thomas S. Cullen, Baltimore; Edward Reynolds, Boston.
(Stenographer—Miss Lidie C. Alexander, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address: The Relations of the Gynecologist to the General Surgeon, Past and Present.
   Howard W. Longyear, Detroit.
2. Preparation of Anemic Patients for Operation.
   Stuart McGuire, Richmond, Va.
   Discussion to be opened by Sidney A. Chalfant, Pittsburgh.
3. The Pathologic and Clinical Significance of Chronic Endocervicitis (Lantern Demonstration).
   Arnold Sturmdorf, New York.
   Discussion to be opened by Thomas S. Cullen, Baltimore.
4. Why the Menstrual Function Should be Preserved in Double Suppurative Disease of the Tubes.
   John Osborn Polak, Brooklyn.
   Discussion to be opened by George H. Noble, Atlanta, Ga.

JOINT MEETING WITH THE SECTION ON NERVOUS AND MENTAL DISEASES

5. Influence of Labor on the Brain Development of the Child.
   Arthur Stein, New York.
   Discussion to be opened by Frederick Peterson, New York; Charles K. Mills, Philadelphia; Edwin B. Cragin, New York, and Edward P. Davis, Philadelphia.

Wednesday, June 6—2 p. m.

6. The Value of Blood Pressure Estimations in the Practice of Obstetrics. J. Morris Slemons, New Haven, Conn.
Discussion to be opened by F. Ashley Faught, Philadelphia.

7. Has the New Born Child with Sutured Cord a Better Start in Life? Comparative Study of 500 Cases.
Frederick J. Taussig, St. Louis.
Discussion to be opened by Robert L. Dickinson, Brooklyn.

8. The Sacro-Iliac Joints in Obstetrics and Gynecology.
Jennings C. Litzenberg, Minneapolis.
Discussion to be opened by Joel E. Goldthwait, Boston.

9. Cesarean Section Scars: A Histologic Study of Four Specimens (Lantern Demonstration).
Alfred B. Spalding, San Francisco.
Discussion to be opened by James A. Harrar, New York, and Nathaniel R. Mason, Boston.

10. Premature Separation of the Normally Implanted Placenta.
Arthur H. Morse, New Haven, Conn.
Discussion to be opened by James W. Markoe, New York.

11. Ectopic Gestation (Lantern Demonstration).
Louis J. Ladinski, New York.
Discussion to be opened by E. Gustav Zinke, Cincinnati.

Thursday, June 7—9 a. m.

12. Prolapse of the Female Urethra (Lantern Demonstration).
John W. Keefe, Providence, R. I.
Discussion to be opened by Edward A. Schumann, Philadelphia.

13. Further Notes on a Rare Type of Bladder Ulcer, with Report of Eighteen Cases.
Guy L. Hunner and George L. Stickney, Baltimore.
Discussion to be opened by Floyd E. Keene, Philadelphia, and William F. Braasch, Rochester, Minn.

14. Ureterotubal and Uretero-Uterine Anastomosis.
Axel F. W. Werelius, Chicago.
Discussion to be opened by Franklin H. Martin, Chicago, and Edward S. Judd, Rochester, Minn.

15. Ovarian Organotherapy: A Preliminary Report.
William P. Graves, Boston.
Discussion to be opened by Robert T. Frank, New York.

16. Appendicitis and the Gynecologist.
Robert T. Morris, New York.
Discussion to be opened by Louis S. McMurtry, Louisville, Ky.

17. Technic and Scope of Local Anesthesia in Abdominal Surgery. Robert E. Farr, Minneapolis.
Discussion to be opened by Charles F. Nassau, Philadelphia, and Urban Maes, New Orleans.

Thursday, June 7—2 p. m.

Election of Officers

18. Causes of Recurrence After Operations on the Bile Passages. Daniel N. Eisendrath, Chicago.
Discussion to be opened by W. Wayne Babcock, Philadelphia.

19. Cholecystostomy Versus Cholecystectomy.
Miles F. Porter, Fort Wayne, Ind.
Discussion to be opened by John G. Clark, Philadelphia.

20. Acute Pancreatitis. John B. Deaver, Philadelphia.
Discussion to be opened by Russell S. Fowler, Brooklyn.

21. Physiologic Colectomy. Charles A. L. Reed, Cincinnati.
Discussion to be opened by Willard Bartlett, St. Louis.

22. Diverticulitis of the Large Intestine.
William J. Mayo, Rochester, Minn.
Discussion to be opened by George D. Stewart, New York, and Charles H. Frazier, Philadelphia.

23. Personal Experience in the Surgical Treatment of Intestinal Stasis. J. Shelton Horsley, Richmond, Va.
Discussion to be opened by John W. Draper, New York.

Friday, June 8—9 a. m.

24. Blood Studies and Other Preoperative Safeguards in Abdominal Surgery. Louis Frank, Louisville, Ky.
Discussion to be opened by Edward B. Krumbhaar, Philadelphia.

25. When Is Cancer Operable?
J. Walter Vaughan, Detroit.
Discussion to be opened by David Riesman, Philadelphia.

26. The End-Results of the Treatment of Inoperable Uterine Cancer by Heat. James F. Percy, Galesburg, Ill.
Discussion to be opened by Herman J. Boldt, New York.

27. The Present Status of Radium Therapy in Diseases of Women. Henry Schmitz, Chicago.
Discussion to be opened by Curtis F. Burnam, Baltimore.

28. Prolapsus Uteri and Its Treatment.
Abraham J. Rongy, New York.
Discussion to be opened by Alexis V. Moschcowitz, New York.

SECTION ON OPHTHALMOLOGY

MEETS IN NORTH BALL ROOM, HOTEL ASTOR

OFFICERS OF SECTION

Chairman—William Zentmayer, Philadelphia.
Vice Chairman—Cassius D. Wescott, Chicago.
Secretary—George S. Derby, Boston.
Executive Committee—Frank C. Todd, Minneapolis; Edward C. Ellett, Memphis, Tenn.; Walter R. Parker, Detroit.
(Stenographer—Dr. Joseph B. Champion, Chicago)

Members are reminded that the meetings of the section will be called to order promptly on the hour scheduled for opening.

The formal reading of the papers will be omitted, as reprints of the papers on the program have already been delivered to members of the section.

Each essayist will be given ten minutes in which to summarize the points in his paper and introduce the discussion, and five minutes in which to close the discussion.

The member appointed to open the discussion of any paper will be allowed ten minutes. Subsequent speakers will be limited to five minutes.

The papers and all discussions will be printed and bound, forming the Transactions of the Section on Ophthalmology for 1917. Copies of the Transactions may be obtained at $1 each, if subscriptions are sent to The Journal of the American Medical Association, 535 North Dearborn Street, Chicago, by July 1, as only enough copies are printed to cover subscriptions received up to the time of going to press.

Members of the section are requested to register in the section registration book at the entrance. The full name and complete postoffice address should be written plainly.

Wednesday, June 6—9 a. m.

1. Chairman's Address. William Zentmayer, Philadelphia.

2. Some Observations Which Seem to Lend Support to a Long Discarded Theory of the Chief Function of the Oblique Muscles of the Eye.
Samuel Theobald, Baltimore.
Discussion to be opened by Giles C. Savage, Nashville, Tenn.

3. Binocular Single Vision: Leaving Out the Consideration of the Color Perception and the Problems of Strabismus.
Edmond E. Blaauw, Buffalo.
Discussion to be opened by Walter B. Lancaster, Boston.

4. The Treatment of Hypopyon Keratitis.
Frederick H. Verhoeff, Boston.
Discussion to be opened by William C. Posey, Philadelphia.

5. Further Study of the Effects of Heat on the Eye.
William E. Shahan, St. Louis.
Discussion to be opened by Edgar S. Thomson, New York.

6. Crystalline Deposits in the Eye.
F. Park Lewis, Buffalo.
Discussion to be opened by Burton Chance, Philadelphia.

Wednesday, June 6—2 p. m.

EXHIBITION OF NEW INSTRUMENTS AND APPLIANCES

7. The Anaphylactic Basis of Sympathetic Ophthalmia: An Experimental Study. Alan C. Woods, Philadelphia.
Discussion to be opened by George E. de Schweinitz, Philadelphia.

SYMPOSIUM ON VACCINE THERAPY

15. The Nonspecificity of Vaccine Therapy.
Joseph L. Miller, Chicago.
16. Bacterial Vaccine Therapy.
James P. Leake, Washington, D. C.
17. Prophylactic Use of Vaccines in the Great War.
Newton E. Wayson, Washington, D. C.

Thursday, June 7—2 p. m.

18. Further Studies on the Development of Edema in Mustard Oil Conjunctivitis.
Arthur D. Hirschfelder, Minneapolis.
19. Ethyl Hydrocuprein (Optochin) in the Treatment of Acute Lobar Pneumonia.
Henry F. Moore and Alan M. Chesney, New York.
20. A Study of the Eggleston Method of Administering Digitalis.
S. Marx White and R. Edwin Morris, Minneapolis.
21. Influence of Large Doses of Digitalis and Digitoxin on the Blood Pressures in Man.
Cary Eggleston, New York.
22. Tyramin as an Adjunct to Morphin in Labor.
Henry G. Barbour, New Haven, Conn.

SECTION ON PATHOLOGY AND PHYSIOLOGY

MEETS IN BLUE ROOM, HOTEL MC ALPIN

OFFICERS OF SECTION

Chairman—James Ewing, New York.
Vice Chairman—C. W. Green, Columbia, Mo.
Secretary—Isabella C. Herb, Chicago.
Executive Committee—William Ophuls, San Francisco; A. J. Carlson, Chicago; F. P. Gay, Berkeley, Calif.
(Stenographer—J. G. Buhler, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address. James Ewing, New York.
2. The Manner in Which Ossification Occurs in Different Pathologic Processes.
Dallas B. Phemister, Chicago.
Discussion to be opened by Leon T. LeWald, New York.
3. Formation of Thrombosis in Veins (Experimental).
Angus McLean, Detroit.
Discussion to be opened by Raymond C. Andries, Detroit.
4. Pigmentation of the Hind Gut: Its Clinical Significance.
W. Landram McFarland, New York.
Discussion to be opened by L. M. Lynch and John W. Draper, New York.
5. The Colloidal Gold Chlorid Test: the Nature of the Solution and Its Application to Diseases of the Central Nervous System.
J. H. Black and R. B. McBride, Dallas, Tex.
Discussion to be opened by Sidney R. Miller, Baltimore.
6. The Nature of the Syphilitic Antigen.
Carl C. Warden, Ann Arbor, Mich.

Wednesday, June 6—2 p. m.

7. A More Delicate Wassermann Reaction Depending on the Use of Larger Quantities of Blood Serum.
P. T. Bohan and L. A. Lynch, Kansas City, Mo.
8. A Comparison of the Chemical Findings in Blood and Spinal Fluid, with Special Reference to Urea Nitrogen, Uric Acid, Creatinin, and Sugar.
R. B. H. Gradwohl, St. Louis.
Discussion to be opened by W. McKim Marriott, Boston.
9. The Importance of Diet as a Factor in the Production of Pathologic Changes.
William Salant, Washington, D. C.
Discussion to be opened by Robert Hatcher, New York.
10. Intravenous Injections of Aceto-Acetic Acid and 1-Beta-Hydroxybutyric Acid at Known Rates.
Russell M. Wilder, Chicago.
11. Some Causes of the Pathology in Diabetes Mellitus.
Albert J. Hodgson, Waukesha, Wis.
12. The Relation Between Bile and Phenol Production in the Intestine. Harry Dubin, Philadelphia.

Thursday, June 7—9 a. m.

13. The Pathologic Physiology of the Heart as Revealed by the Polygraph and the Electrocardiograph.
Louis F. Bishop, New York.
Discussion to be opened by Thomas S. Lee, Washington, D. C.
14. A Critique of Banti's Disease.
Eli Moschcowitz, New York.
15. Immunologic Studies in Poliomyelitis.
Edward C. Rosenow, Rochester, Minn.
16. Ether Therapy in Surgical Infections and Its Effect on Immunity. John Saliba, Elizabeth City, N. C.
17. Experimental Lesions in the Cervical Sympathetic Ganglia and Thyroids of Goats.
Louis B. Wilson, Rochester, Minn.
18. The Etiology and Pathology of Rocky Mountain Spotted Fever. S. B. Wolbach, Boston.

Thursday, June 7—2 p. m.

Election of Officers

19. The Occurrence of Tubercle Bacilli in the Breast Milk of Tuberculous Women.
Frederick Coonley, New York.
20. Clinical Pathology and Morbid Anatomy of Experimental Trypanosome Anemia.
E. B. Krumbhaar and R. M. Pearce, Philadelphia.
21. An Apparatus for the Study of the Dissociation of Oxyhemoglobin. W. G. MacCallum, New York.
22. The Morphologic Appearance of Cancer Clinically Cured by Means of Radium and Roentgen Rays.
Isaac Levin and B. Joseph, New York.
Discussion to be opened by Henry Schmitz, Chicago.
23. Study of the Streptothrix Isolated in Two Cases of Rat-Bite Fever. William Litterer, Nashville, Tenn.

Friday, June 8—9 a. m.

JOINT MEETING WITH THE SECTION ON SURGERY, GENERAL AND ABDOMINAL, GRAND BALL ROOM, WALDORF-ASTORIA

24. Anesthesia in the Curriculum and Clinic.
Willis D. Gatch, Indianapolis.
Discussion to be opened by Arthur Dean Bevan, Chicago.
25. Pathologic Pulmonary Changes from Endotracheal Insufflation Anesthesia in Experimental Lung Surgery (Lantern Demonstration).
Conrad Georg, Jr., Ann Arbor, Mich.
Discussion to be opened by Willy Meyer and Charles H. Peck, New York.
26. Shock During General Anesthesia.
Frank C. Mann, Rochester, Minn.
Discussion to be opened by J. Frank Corbett, Minneapolis.
27. Toxic Factors of Some of the Common Anesthetic Substances. Evarts A. Graham, Mason City, Iowa.
Discussion to be opened by James J. Hogan, Vallejo, Calif.
28. Defective Angiogenesis as a Factor in the Production of Primary Renal Aplasia, Hypoplasia and Dysplasia.
W. M. L. Coplin, Philadelphia.
29. Cerebrospinal Fluid and the Colloidal Gold Chlorid Test.
Lloyd D. Felton, Baltimore.

SECTION ON STOMATOLOGY

MEETS IN YACHT ROOM, HOTEL ASTOR

OFFICERS OF SECTION

Chairman—Arthur D. Black, Chicago.
Vice Chairman—Henry S. Dunning, New York.
Secretary—Eugene S. Talbot, Chicago.
Executive Committee—Virgil Loeb, St. Louis; William C. Fischer, New York; Frederick B. Moorehead, Chicago.
(Stenographer—William Smart, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address: Roentgenographic and Microscopic Studies of the Tissues Involved in Chronic Mouth Infections. Arthur D. Black, Chicago.
2. Chronic Diseases of the Mouth of Interest to Both Physician and Dentist (Lantern Demonstration).
Kurt H. Thoma, Boston.
3. Cysts of the Dental System.
Katherine W. Dewey, Chicago

4. A Study of the Infectious Granular Tissue Found at the Apexes of Pulpless Teeth Commonly Called Chronic or Blind Abscesses. Herbert A. Potts, Chicago.

5. The Retention of Devitalized Teeth Without Danger of Focal Infection. Meyer L. Rhein, New York.
Discussion to be opened by Harry Germain, Boston.

Wednesday, June 6—2 p. m.

Election of Officers

6. Epithelioma or Cancer of the Oral Cavity. L. Duncan Bulkley, New York.

7. Treatment of Cancer of the Mouth by Electrical Cautery, with or without Operative Measures.
John W. Bransfield and George M. Dorrance, Philadelphia.
Discussion to be opened by Albert J. Ochsner, Chicago. and Joseph C. Bloodgood. Baltimore.

8. Injuries of the Temporomandibular Articulation: Their Diagnosis and Treatment. Henry Sage Dunning, New York.

9. Tuberculosis of the Tongue.
John W. Means and Jonathan Forman, Columbus, Ohio.

10. Preliminary Report of Investigations as to the Frequency of Metastatic Eye Infections from Primary Dental Foci. Joseph M. Levy, New York.

Thursday, June 7—2 p. m.

11. Bone Surgery as Applied to the Jaws, with Special Reference to Bone Regeneration. Morris I. Schamberg, New York.

12. A Composite Osteoplastic Closure of Clefts of the Hard Palate. John B. Roberts, Philadelphia.

13. "Soup Bone" Implants for the Correction of Defects of the Skull and Face. W. Wayne Babcock, Philadelphia.
Discussion to be opened by Allen B. Kanavel, Chicago, Frederick B. Moorehead, Chicago, George V. I. Brown, Milwaukee, Wis., and Thomas L. Gilmer, Chicago.

14. A New Operation for the Immediate Surgical Separation of the Superior Maxillary Bones to Widen the Nares for the Improvement of Respiratory and Other Conditions (Lantern Demonstration).
George V. I. Brown, Milwaukee, Wis.
Discussion to be opened by Joseph S. Evans, Jr., Madison, Wis., Glenford L. Bellis, Wauwatosa, Wis., Otto H. Foerster, Milwaukee, Wis., and D. F. MacMillan, Chicago.

SECTION ON NERVOUS AND MENTAL DISEASES

MEETS IN ROOF GARDEN, HOTEL MC ALPIN

OFFICERS OF SECTION

Chairman—Bernard Sachs, New York.
Vice Chairman—Charles W. Hitchcock, Detroit.
Secretary—A. S. Hamilton, Minneapolis.
Executive Committee—Howell T. Pershing, Denver; W. W. Graves, St. Louis; Francis X. Dercum, Philadelphia.
(Stenographer—Miss V. E. Bates, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address: The Truth About Intraspinous Injections in the Treatment of Syphilis of the Nervous System. Bernard Sachs, New York.

2. Progress in Psychiatric Teaching. Adolf Meyer. Baltimore.

3. State Organization for Mental Hygiene. Owen Copp, Philadelphia.

JOINT MEETING WITH THE SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY, ASTOR GALLERY, WALDORF-ASTORIA

4. Influence of Labor on the Brain Development of the Child. Arthur Stein, New York.
Discussion to be opened by Frederick Peterson, New York; Charles K. Mills, Philadelphia; Edwin B. Cragin, New York, and Edward P. Davis, Philadelphia.

Wednesday, June 6—2 p. m.

5 Hysterical Lethargy. David I. Wolfstein, Cincinnati.

6. The Neurasthenic at the Threshold. Francis R. Fry, St. Louis

7. The Psychoneuroses: How Shall We Look on Them Today? Theodore Diller, Pittsburgh.

8. The Medicolegal Problems of the Traumatic Neuroses. Edward E. Mayer, Pittsburgh.

9. Clinical and Pathologic Study of Fifty Cases of Paresis. Lawson G. Lowrey, Boston.

10. Psychoses Other than Paretic Dementia in Syphilitic Individuals. Alfred Gordon, Philadelphia.

Thursday, June 7—9 a. m.

11. The Early Recognition of Multiple Sclerosis, with Report of Twelve Cases. Leo M. Crafts, Minneapolis.

12. Charcot-Marie Tooth Type of Progressive Muscular Atrophy. George Wilson, Philadelphia.

13. Metabolism of Muscular Dystrophy. Simon P. Goodhart, New York.

14. Report of a Case of Syringomyelia with Operation: The Difference Between it and Amyotrophic Lateral Sclerosis. Edward D. Fisher, New York.

15. A Lack of Correspondence Between Operative Findings and Symptoms in a Series of Neurosurgical Cases.
Sidney I. Schwab and Ernest Sachs, St. Louis.

16. Familial Head Nystagmus in Four Generations, Associated with Ocular Nystagmus. Nathaniel S. Yawger, Philadelphia.

Thursday, June 7—2 p. m.

Election of Officers

17. Cerebrospinal Fluid Pressure. Andrew L. Skoog, Kansas City, Mo.

18. Organic Changes in the Central Nervous System Due to Probable Focal Infections. George W. Hall, Chicago.

19. Sciatica and Its Treatment. Israel Strauss, New York.

20. Pituitary Disease: Study of 100 Cases.
Isador Abrahamson and Hyman Climenko, New York.

21. The Antipoliomyelitis Hesse Serum.
Marcus Neustaedter and E. Banzhaf, New York.

22. Persistent Treatment of Epilepsy. Howell T. Pershing, Denver.

23. Dystonia. John H. W. Rhein, Philadelphia.

Friday, June 8—9 a. m.

JOINT MEETING WITH THE SECTION ON DISEASES OF CHILDREN AND THE SECTION ON ORTHOPEDIC SURGERY, WINTER GARDEN, HOTEL MC ALPIN

SYMPOSIUM ON POLIOMYELITIS

24. Early Diagnosis and Specific Treatment of Poliomyelitis. George Draper, New York.

25. Treatment of Infantile Paralysis, with Special Reference to Study of New York State Cases. Robert W. Lovett, Boston.

26. Practical Aspects of the Treatment of Anterior Poliomyelitis. Armitage Whitman, New York.

27. Contagiousness of Acute Poliomyelitis. Charles Herrman, New York.

28. Results of Present Epidemic of Infantile Paralysis. Henry L. K. Shaw, Albany, N. Y.

29. The Hematogenous Invasion of the Cerebrospinal Axis in Poliomyelitis. LaSalle Archambault, Albany, N. Y.

30. Recent Additions to Our Knowledge of Poliomyelitis. Frederick Tilney, New York.

SECTION ON DERMATOLOGY

MEETS IN ACADEMY OF MEDICINE, DU BOIS HALL

OFFICERS OF SECTION

Chairman—Henry R. Varney, Detroit.
Vice Chairman—Frank E. Simpson, Chicago.
Secretary—Henry H. Hazen, Washington, D. C.
Executive Committee—Richard L. Sutton, Kansas City, Mo.; Howard Fox, New York; Howard Morrow, San Francisco.
(Stenographer—James C. Marriott, New York)

Wednesday, June 6—9 a. m.

1. Chairman's Address: The Hospital Opportunities and Responsibilities for the Syphilitic. Henry R. Varney, Detroit.

SYMPOSIUM ON THE ECONOMIC IMPORTANCE AND TEACHING OF SYPHILIS

2. The Economic Importance of Syphilis.
Major Henry J. Nichols, Fort Bliss, Texas, and Major Mathew A. Reasoner, Washington, D. C.

3. The Teaching of Syphilis. John A. Fordyce, New York.

4. The Teaching of Syphilis. C. Morton Smith, Boston.

5. The Teaching of Syphilis.
Walter J. Heimann, New York.
Discussion on Syphilis to be opened by William T. Corlett, Cleveland; Harry G. Irvine, Minneapolis, and Udo J. Wile, Ann Arbor, Mich.

6. A Study of the Manner in Which Mercury is Absorbed When Administered by Inunction.
Jay Frank Schamberg, John A. Kolmer and George W. Raiziss, Philadelphia.

Wednesday, June 6—2 p. m.

Election of Officers

SYMPOSIUM ON NEOPLASMS

7. Mycosis Fungoides: A Study of Seven Cases.
J. Frank Fraser, New York.

8. The Skin Changes in Hodgkin's Disease.
Harold N. Cole, Cleveland.

9. Lymphadenosis Cutis Universalis, Associated with Generalized Erythrodermia and Atrophy of the Skin.
Fred Wise, New York.

10. An Analysis of Forty-One Cases of Skin Cancer.
Samuel E. Sweitzer, Minneapolis.

11. Primary Nonpigmented Sarcoma of the Skin.
Joseph Zeisler and Erwin Paul Zeisler, Chicago.
Discussion on Neoplasms to be opened by Richard L. Sutton, Kansas City, Mo., and Henry H. Hazen, Washington, D. C.

12. Clinical Considerations on Epidermolysis Bullosa.
A. Ravogli, Cincinnati.

Thursday, June 7—9 a. m.

13. The Treatment of Impetigo Contagiosa.
Howard Morrow, San Francisco.
Discussion to be opened by Michael L. Ravitch, Louisville, Ky.

14. Ringed Hairs: A Study.
Frank Crozer Knowles, Philadelphia.

15. Papulonecrotic Pernio of the Auricle.
Arthur J. Markley, Denver.

16. Argyria Localis Due to Organic Silver Preparations.
George Manghill Olson, Minneapolis.

17. Primrose Dermatitis: Its Relationship to Anaphylaxis.
C. Augustus Simpson, Washington, D. C.

18. Perleche. John E. Lane, New Haven, Conn.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

MEETS IN THE MUSIC ROOM, HOTEL BILTMORE

OFFICERS OF SECTION

Chairman—Otto P. Geier, Cincinnati.

Vice Chairman—Ernest C. Levy, Richmond, Va.

Secretary—A. M. Harvey, Chicago.

Executive Committee—M. P. Ravenel, Columbia, Mo.; C. Hampson Jones, Baltimore; William C. Rucker, Washington, D. C.

(Stenographer—George B. Cock, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address: Adequate Medical Service of the Future. Otto P. Geier, Cincinnati.
Discussion to be opened by Frederick R. Green, Chicago, and Lee K. Frankel, New York.

2. The New Public Health.
W. S. Rankin, Raleigh, N. C.
Discussion to be opened by W. C. Woodward, Washington, D. C., and Henry Bracken, St. Paul.

3. The Diagnostic Clinic as a Factor in Higher Standards of Medical Practice. David L. Edsall, Boston.
Discussion to be opened by Ernest C. Levy, Richmond, Va., Rodger S. Morris, Cincinnati, and Robert Pollock, San Diego, Calif.

4. The Industrial Dispensary as a Contribution to Public Health. Sidney M. McCurdy, Youngstown, Ohio.
Discussion to be opened by Harry E. Mock, Chicago; Milton J. Rosenau, Boston, and George M. Kober, Washington, D. C.

5. The All-Day School Dispensary in the Prevention of Disease. John Newell Hurty, Indianapolis.
Discussion to be opened by L. Emmett Holt, New York, and Taliaferro Clark, Washington, D. C.

Wednesday, June 6—2 p. m.

6. The Need for Compulsory Health Insurance.
Prof. Irving Fisher, New Haven, Conn.
Discussion to be opened by Ralph S. Cone, Westwood, N. J., and S. S. Goldwater, New York.

7. Facts and Fallacies of Compulsory Sickness Insurance.
Mr. Frederick L. Hoffman, Newark, N. J.
Discussion to be opened by Eden V. Delphey, New York, and Wilber E. Post, Chicago.

8. The Industrial Aspect.
Mr. M. W. Alexander, West Lynn, Mass.
Discussion to be opened by I. M. Rubinow, New York; Walter Cannon, Boston, and Alice Hamilton, Chicago.

9. Organized Labor's Position.
Mr. Grant Hamilton, Washington, D. C.
Discussion to be opened by Mr. Miles M. Dawson and Samuel Joseph Kopetzky, New York.

10. The Medical Aspect.
Alexander Lambert, New York.
Discussion to be opened by W. D. Chapman, Silvis, Ill.

Thursday, June 7—9 a. m.

Election of Officers

11. Compulsory Military Service as a Factor in Public Health.
Major General Leonard Wood, Washington, D. C.
Discussion to be opened by Guy L. Kiefer, Detroit, and W. C. Rucker, Washington, D. C.

12. Preparations for Public Health During War.
Franklin H. Martin, Chicago.
Discussion to be opened by H. E. Dearholt, Milwaukee, Wis.

13. The Protection of the Health of the Worker in War.
W. Irving Clark, Jr., Worcester, Mass.
Discussion to be opened by T. R. Crowder, Chicago, and G. W. Schereschewsky, Pittsburgh.

14. The Sanitary Success Attained During the Mobilization Along the Mexican Border in 1916.
W. P. Chamberlain, Fort Banks, Mass.
Discussion to be opened by C. St. Clair Drake, Springfield, Ill.

15. The Medical Student as a Medicomilitary Cadet.
H. C. Coe, New York.
Discussion to be opened by Francis E. Fronczak, Buffalo.

16. Epidemiologic Study of a Measles Outbreak in the Border Army. E. L. Munson, San Antonio, Tex.
Discussion to be opened by B. Franklin Royer, Harrisburg, Pa.

Thursday, June 7—2 p. m.

17. Some Aspects of the Public Health in China.
W. W. Peter, Shanghai, China.
Discussion to be opened by W. A. Evans, Chicago.

18. Community Health and Tuberculosis Demonstration.
A. B. Armstrong, Framingham, Mass.
Discussion to be opened by S. Adolphus Knopf, New York.

19. Prophylactic Therapy of Rickets in a Negro Community.
A. F. Hess, New York.
Discussion to be opened by J. H. Mason Knox, Baltimore.

20. A Discussion of the Cause of the Occasional Failure of Typhoid Vaccine to Immunize.
John A. Robison, Chicago.

21. Personal Observations as to Trench Prophylaxis.
R. W. Corwin, Pueblo, Colo.
Discussion to be opened by W. O. Sherman, Pittsburgh.

22. The Place of Infant Welfare in an Institution of Hygiene.
J. H. Mason Knox, Baltimore.

SECTION ON GENITO-URINARY DISEASES

MEETS IN GREEN ROOM, WALDORF-ASTORIA

OFFICERS OF SECTION

Chairman—Hugh Cabot, Boston.
Vice Chairman—Carl Wheeler, Lexington, Ky.
Secretary—William F. Braasch, Rochester, Minn.
Executive Committee—Arthur L. Chute, Boston; Granville MacGowan, Los Angeles; Louis E. Schmidt, Chicago.
(Stenographer—Dr. William G. Young, Washington, D. C.)

Wednesday, June 6—2 p. m.

1. Treatment of Chancroids.
   Frederick W. Robbins and Frank C. Seabury, Detroit.
   Discussion to be opened by Noah E. Aronstam, Detroit.
2. Clinical Considerations of Verumontanum Diseases Based on Histopathology. Anton G. Rytina, Baltimore.
   Discussion to be opened by Alexander Randall, Philadelphia.
3. External Urethrotomy and Seminal Vesiculotomy Combined in a Single Operative Procedure.
   Eugene Fuller, New York.
   Discussion to be opened by Hugh H. Young, Baltimore.
4. Certain Forms of Vesical Abscess of Extravesical Origin.
   Louis E. Schmidt, Chicago.
5. The Significance of Tubercle Bacilli in the Urine.
   William M. Spitzer, William W. Williams and Ward T. Burdick, Denver.
   Discussion to be opened by Thomas W. Hastings, New York.
6. Genito-Urinary Moving Pictures.
   Edgar G. Ballenger, Atlanta, Ga.

Thursday, June 7—9 a. m.

7. Bladder Disturbances Due to Nerve Lesions.
   George G. Smith, Boston.
   Discussion to be opened by John R. Caulk, St. Louis, and William C. Quinby, Boston.
8. Vesical Diverticula: Operation in Two Cases, with Remarks on Technic. Bransford Lewis, St. Louis.
   Discussion to be opened by William E. Lower, Cleveland.
9. Syphilis of the Bladder.
   Harry A. Fowler, Washington, D. C.
   Discussion to be opened by Edward L. Keyes, Jr., New York.
10. A Study of the Results of Treatment of Various Types of Bladder Tumors. John T. Geraghty, Baltimore.
    Discussion to be opened by William F. Braasch, Rochester, Minn.
11. Cystectomy as a Method of Treatment in Certain Types of Malignant Tumors of the Bladder.
    William E. Lower, Cleveland.
    Discussion to be opened by J. Bentley Squier, New York.
12. Radium Treatment of Bladder and Prostatic Carcinoma.
    Benjamin S. Barringer, New York.
    Discussion to be opened by Edward L. Keyes, Jr., New York.

Thursday, June 7—2 p. m.

Election of Officers

SYMPOSIUM ON ROENTGENOGRAPHIC AND CLINICAL DIAGNOSIS OF LITHIASIS IN THE URINARY TRACT

13. Improved Technic for Radical Excision of Carcinoma of Prostate and Seminal Vesicles.
    Hugh H. Young, Baltimore.
14. Review of a Series of Roentgenographic Examinations of the Urinary Tract.
    Eugene W. Caldwell, New York.
15. The Differential Diagnosis of Ureteral Calculi from Concretions in the Appendix and Other Lesions Associated with Roentgen Shadows.
    Leon T. LeWald, New York.
16. Roentgen Diagnosis of Renal Calculi.
    Alexander B. Moore, Rochester, Minn.
17. Roentgenographic Diagnosis of Lithiasis in the Urinary Tract. Percy E. Brown, Boston.
18. The Clinical Diagnosis of Lithiasis of the Upper Urinary Tract. Edward L. Young, Jr., Boston.
19. Clinical Diagnosis of Lithiasis.
    Henry G. Bugbee, New York.
    Discussion on Roentgenographic Diagnosis of Lithiasis to be opened by Frederick H. Baetjer, Baltimore; Henry K. Pancoast, Philadelphia; J. Bentley Squier, New York, and William F. Braasch, Rochester, Minn.

Friday, June 8—9 a. m.

20. The Intravenous Phlorizin Test.
    Martin Krotoszyner and William E. Stevens, San Francisco.
    Discussion to be opened by Robert H. Greene, New York.
21. Comparative Results of a Number of Functional Kidney Tests on a Series of Patients.
    Benjamin A. Thomas and Joseph C. Birdsall, Philadelphia.
    Discussion to be opened by Stephen E. Tracy, Philadelphia.
22. The Value of Making a Routine Leukocyte Count on the Urine in Infections of the Higher Urinary Tract (Lantern Demonstration).
    Herman L. Kretschmer, Chicago.
    Discussion to be opened by Louis E. Schmidt, Chicago.
23. Surgical Diseases of the Urinary Tract in Children.
    Abraham Hyman, New York.
    Discussion to be opened by Leo Buerger, New York.
24. The Relationship of Pain to Renal Calculus.
    Ferdinand C. Walsh, San Antonio, Texas.
    Discussion to be opened by J. Bentley Squier, New York.
25. Polycystic Kidney.
    Charles E. Barnett, Fort Wayne, Ind.
    Discussion to be opened by Robert C. Bryan, Richmond, Va.

SECTION ON ORTHOPEDIC SURGERY

MEETS IN ASSEMBLY HALL, WALDORF-ASTORIA

OFFICERS OF SECTION

Chairman—E. W. Ryerson, Chicago.
Vice Chairman—Robert B. Osgood, Boston.
Secretary—Emil S. Geist, Minneapolis.
Executive Committee—Leonard W. Ely, San Francisco; Nathaniel Allison, St. Louis; Russell A. Hibbs, New York. (Stenographer—Miss Lulu Gay, Philadelphia)

Wednesday, June 6—9 a. m.

1. Chairman's Address The Care of Cripples as a Problem for Each Individual State.
   Edwin W. Ryerson, Chicago.
2. Treated and Untreated Osteochondritis of the Hip.
   Wallace Blanchard, Chicago.
   Discussion to be opened by Augustus Thorndike, Boston, and James T. Rugh, Philadelphia.
3. Neurotization of Paralyzed Muscle: a Clinical and Laboratory Study (Lantern Demonstration).
   John Joseph Nutt, New York.
   Discussion to be opened by Alexander Fraser, New York, and Arthur Steindler, Iowa City, Iowa.
4. The Lame and Stiff Shoulder.
   Carl H. Bucholz, Boston.
   Discussion to be opened by Robert Osgood, Boston, and Walter Truslow, Brooklyn.
5. Arthritis and Foreign Protein.
   Henry B. Thomas, Chicago.
   Discussion to be opened by Joseph E. Miller and Walter G. Stern, Cleveland.
6. Fractures. Horace R. Allen, Indianapolis.
   Discussion to be opened by Maurice I. Rosenthal, Fort Wayne, Ind., and Frederic J. Cotton, Boston.

Wednesday, June 6—2 p. m.

7. Study of a Group of 110 Cases of Poliomyelitis, from the Acute Attack to the Present Time.
   Charles Ogilvy, New York.
   Discussion to be opened by Henry Ling Taylor and Charlton Wallace, New York.
8. The Orthopedic Treatment of Acute and Convalescent Poliomyelitis. E. D. Ebright, Coney Island, N. Y.
   Discussion to be opened by Walter Truslow, Brooklyn, and Henry B. Thomas, Chicago.

9. The Treatment of Anterior Poliomyelitis at Fordham Hospital. Samuel W. Boorstein, New York.
Discussion to be opened by John L. Porter, Chicago, and Willis C. Campbell, Memphis, Tenn.

10. The Bone Pin Arthrodesis in the Treatment of Flatfoot, Paralytic Valgus, etc.
Robert E. Soule, Newark, N. J.
Discussion to be opened by Gwilym G. Davis, Philadelphia, and Hiram W. Orr, Lincoln, Neb.

11. The Treatment of Spinal Deformities Caused by Infantile Paralysis. Russell A. Hibbs, New York.
Discussion to be opened by Fred J. Fassett, Seattle, and Maynard C. Harding, San Diego, Calif.

12. Correction of Skeletal Defects of Lower Extremities Resulting from Poliomyelitis (Lantern Demonstration).
Michael Hoke, Atlanta, Ga.

Thursday, June 7—9 a. m.

13. The Treatment of Scoliosis.
Frank E. Peckham, Providence, R. I.
Discussion to be opened by Albert H. Freiberg, Cincinnati, and Edville G. Abbott, Portland, Me.

14. The Operative Treatment of Tuberculosis of the Knee Joint in Adults. Robert B. Osgood, Boston.
Discussion to be opened by Melvin S. Henderson, Rochester, Minn., and Fred H. Albee, New York.

15. Tuberculosis of the Bones and Joints: a Pathologic and Clinical Study. Nathaniel Allison, St. Louis.
Discussion to be opened by Dallas B. Phemister, Chicago, and Robert B. Osgood, Boston.

16. Operative Orthopedics. Royal Whitman, New York.
Discussion to be opened by Samuel Kleinberg, New York, and Edwin W. Ryerson, Chicago.

17. Technic of the Carrel Method of Treating Infections of the Bones and Joints (Moving Pictures).
George W. Hawley, Bridgeport, Conn.

Thursday, June 7—2 p. m.

Election of Officers

18. A Further Report of the First Sixty-Five Cases of Cranial Decompression for Selected Cases of Spastic Paralysis Due to Hemorrhage.
William Sharpe and Benjamin P. Farrell, New York.

19. The Results of the Treatment of Obstetric Paralysis.
James W. Sever, Boston.
Discussion to be opened by John Dunlop, Washington, D. C., and William S. Baer, Baltimore.

20. Pain in the Arm: Subdeltoid (Subacromial) Bursitis (Lantern Demonstration).
Walter M. Brickner, New York.
Discussion to be opened by Henry Ling Taylor and Reginald H. Sayre, New York.

21. Simplified Technic of Laminectomy.
Frederick J. Gaenslen, Milwaukee, Wis.
Discussion to be opened by Edwin W. Ryerson, Chicago, and Frederick C. Kidner, Detroit.

22. An Operation for Congenital Equinovarus Deformity.
Frank R. Ober, Boston.

23. Juxta-Articular Bone Lesions of the Hip.
Henry Ling Taylor and George Barrie, New York.
Discussion to be opened by Charles F. Painter and Elliott G. Brackett, Boston.

Friday, June 8—9 a. m.

JOINT MEETING WITH THE SECTION ON NERVOUS AND MENTAL DISEASES AND THE SECTION ON DISEASES OF CHILDREN, WINTER GARDEN, HOTEL MC ALPIN

SYMPOSIUM ON POLIOMYELITIS

24. Early Diagnosis and Specific Treatment of Poliomyelitis.
George Draper, New York.

25. Treatment of Infantile Paralysis, with Special Reference *to Study of New York State Cases.*
Robert W. Lovett, Boston.

26. Practical Aspects of the Treatment of Anterior Poliomyelitis. Armitage Whitman, New York.

27. Contagiousness of Acute Poliomyelitis.
Charles Herrman, New York.

28. Results of Present Epidemic of Infantile Paralysis.
Henry L. K. Shaw, Albany, N. Y.

29. The Hematogenous Invasion of the Cerebrospinal Axis in Poliomyelitis.
LaSalle *Archambault*, Albany, N. Y.

30. Recent Additions to Our Knowledge of Poliomyelitis.
Frederick Tilney, New York.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

MEETS IN GREEN ROOM, HOTEL MC ALPIN

OFFICERS OF SECTION

Chairman—Dwight H. Murray, Syracuse, N. Y.
Vice Chairman—Anthony Bassler, New York.
Secretary—Louis J. Hirschman, Detroit.
Executive Committee—William M. Beach, Pittsburgh; William Van V. Hayes, New York; Charles G. Stockton, Buffalo.
(Stenographer, Miss Mildred L. Blumenthal, *New York)*

Wednesday, June 6—9 a. m.

1. Chairman's Address: Dwight H. Murray, Syracuse, N. Y.

2. Achylia. Martin E. Rehfus, Philadelphia.
Discussion to opened by Charles D. Aaron, Detroit; Albert F. R. Andresen, Brooklyn; Max Einhorn, New York, and Allen A. Jones, Buffalo.

3. Surgical Treatment of Enterocolonic Chronic Diarrheas.
Samuel G. Gant, New York.
Discussion to be opened by John F. Binnie, Kansas City, Mo.; John M. T. Finney, Baltimore, and Hugo O. Pantzer, Indianapolis.

4. Chronic Diarrheas Due to Enterocolonic Conditions: The Medical Standpoint. Julius Friedenwald, Baltimore.
Discussion to be opened by Leo H. Neuman, Albany, N. Y.; Bertram W. Sippy, Chicago, and Charles D. Spivak, Denver.

5. Rectal and Sigmoidal Conditions in Chronic Diarrhea.
John L. Jelks, Memphis, Tenn.
Discussion to be opened by Thomas C. Hill, Boston; Fred T. Murphy, St. Louis, and James A. MacMillan, Detroit.

6. Statistical and Clinical Review of 450 Cases of Cancer of the Rectum and Colon. Jerome M. Lynch, New York.
Discussion to be opened by George B. Evans, Dayton, Ohio, and Frank C. Yeomans, New York.

Wednesday, June 6—2 p. m.

Election of Officers

7. The Symptomatology of the Nervous System in Chronic *Intestinal Toxemia. G. Reese Satterlee, New York.*
Discussion to be opened by Seale Harris, *Birmingham,* Ala., and Curran Pope, Louisville, Ky.

8. Roentgen Observations on the Motor Phenomena of the Normal and Pathologic Colon (Lantern Demonstration). James T. Case, Battle Creek, Mich.
Discussion to be opened by Walter C. Alvarez, San Francisco, and William H. Stewart, New York.

9. Mucosal Type of Gastric and Duodenal Ulcer (Lantern Demonstration). Lewis Gregory Cole, New York.
Discussion to be opened by Preston M. Hickey, Detroit, and Russell D. Carman, Rochester, Minn.

10. A Further Report of the Use of Quinin and Urea in the Treatment of Hemorrhoids.
Emmett H. Terrell, Richmond, Va.
Discussion to be opened by Collier F. Martin, Philadelphia.

11. Anal and Rectal Fistula (Lantern Demonstration).
J. Rawson Pennington, Chicago.
Discussion to be opened by William M. Beach, Pittsburgh.

Thursday, June 7—9 a. m.

12. Gastric Conditions in Chronic Constipation.
William G. Morgan, Washington, D. C
Discussion to be opened by John W. Bell, Minneapolis, Prof. A. J. Carlson, Chicago, and I. Harris Levy, Syracuse, N. Y.

13. Autointoxication in Chronic Constipation.
Horace W. Soper, St. Louis.
Discussion to be opened by Henry Illoway, New York, and Dudley D. Roberts, Brooklyn.

14. Enterocolonic Conditions in Chronic Constipation.
Granville S. Hanes, Louisville, Ky.
Discussion to be opened by Walter A. Bastedo, New York; Joseph C. Bloodgood, Baltimore, and Emmett H. Terrell, Richmond, Va.

15. Rectal Conditions in Chronic Constipation.
Alois B. Graham, Indianapolis.
Discussion to be opened by Lewis H. Adler, Jr., Philadelphia, and Samuel T. Earle, Baltimore.

16. Dynamic and Adynamic Intestinal Obstruction.
John W. *Draper,* New York.
Discussion to be opened by Angus McLean, Detroit.

to approach him and ask him for [illegible] reticent with your questions, [illegible] We [illegible]

[illegible]

[illegible] and Biologic Products

[illegible]

The Dr. A. Wander Société Anonyme of Berne, Switzerland, Space 107, will conduct its first exhibit at an A. M. A. Session this year. Their dietetic food "Ovaltine," a malt milk and egg food beverage, will be displayed. A number of unique features are promised. Waukesha Health Products Company, Space 98, will demonstrate their Diabetic Foods, Hepco Products. Hepco Products include Hepco Flour, the original Soya Bean Meal, Hydro Process. Hepco Dodgers, a diabetic bread in cracker form, and Hepco Grits are also manufactured by this company. The Welch Grape Juice Company at Booth 39 will, as usual, serve Welch's Grape Juice to the visiting physicians.

Roentgenographic Apparatus and Accessories

The Eastman Kodak Company, Space 60, will show what can be done with Seed X-Ray Plates, Eastman X-Ray Films and Dental X-Ray Films. Experts will explain how the plates are made and how to prevent photographic troubles. Sundries for the complete equipment of the dark room will also be displayed; a new camera for making reductions of Roentgen-ray plates to 5 by 7 or lantern slide size will be exhibited. The General Electric Company, Spaces 43 and 44, will exhibit roentgenograms taken with different types of Coolidge x-ray tubes. In addition there will be shown several types of Coolidge tubes and the different steps in the manufacture of the tube will be explained. Do not forget to examine the plate exhibit at the booth of the William Meyer Company, Spaces 74 and 75. All the negatives shown are taken with the Meyer Interrupterless Transformer. Roentgenographers who do their own developing will be given a convenient dark room device when registering at this booth. The exhibit of the Victor Electric Corporation will occupy approximately 300 square feet, Exhibit Spaces 53 and 54, in which they will demonstrate the new Model Snook Interrupterless X-Ray Transformer; also selections of standard apparatus which in the aggregate will make up a complete Roentgen and electromedical department. Vulcan Coil Company, Spaces 81 and 82, will exhibit samples of the Vulcan Coil comprising models from the small portable types to larger cabinet machines and also some accessory apparatus, such as tube holder brackets. Their special feature will be sectional apparatus, so designed that the Roentgen-ray machine is used as a base unit, and treatment units may be added as required. The Wappler Electric Company, Exhibit Spaces 103, 104 and 105, will include among other apparatus the "Bellevue" model Roentgen-ray machine. A feature of this machine is its glass-covered switchboard. A shock-proof switchboard is also included in the little "Empire" radiographic interrupterless machine, which, placed side by side with its giant brother, the "Bellevue," will give the observer a clear idea of the many machines differing in type as well as size that are manufactured by this company. A full line of the "A. C. M. I." cystoscopes and urethroscopes, the May ophthalmoscope, and other apparatus of interest will be additional features.

Eye, Ear, Nose and Throat Appliances and Microscopes

The Bausch & Lomb Optical Company, Space 15, will feature their new binocular microscope which they claim is a real advance in microscope construction. The new ophthalmologic department of this company will introduce a modern test frame with test lenses, the latter designated in vertex refraction. Ophthalmologists will no doubt appreciate this exhibit, which offers them a perspective into the fine points of the manufacture of their professional necessities. General Optical Company, Space 17, will exhibit its regular line of high grade optical goods. The visiting ophthalmologists will be delighted with the character of this display. This firm announces its policy as one of progressiveness, true service and high standards. F. A. Hardy & Co., Space 14, expect to show a "knot pusher" used in tonsil work, two new style lid clamps, an electrically lighted mouth gag and tongue depressor, a corneal dissector, three new style submucous knives devised by Dr. Otto Freer, and the regular Hardy controlled specialties, the Gradle Tonometer, the Gradle Trephine, and the Tydings Snare. In addition they will have a full line of ophthalmologic instruments and eye, ear, nose and throat surgical instruments. The exhibition of E. Leitz, Inc., Booth 3, will comprise a variety of apparatus manufactured by this firm in this country. (Most of their instruments were formerly imported.) The following are just a few of the apparatus manufactured and sold by this company: Duboscq-Leitz Colorimeter, Nephelometer Attachment, Hellige-Leitz Colorimeter, Kuttner-Leitz Colorimeter, Meyer-Leitz Colorimeter, "Radio" Lamp for microscope illumination, Diagnostic Microtomes, "Elei" Centrifuges, and the "Elei" Wassermann-Bath. They will also have a line of American made Blood Counting Apparatus. E. B. Meyrowitz, Inc., Spaces 7 and 20, will exhibit eye, ear, nose and throat instruments, including a number of unusual items of scientific interest. Among these might be mentioned the giant magnet for extracting pieces of steel from the eye, special magnifiers, like the Berger Loupe to assist in the removal of foreign bodies, electrical ophthalmoscopes, auriscopes, and a remarkably complete electrotherapeutic apparatus. Of special interest will be that part of the exhibit of tests and apparatus for testing vision and color sense. This will interest army and navy officers, and physicians in civil life who examine for railroads, steamships and large industrial plants. Michael Woolf, Space 4, will show the new Automatic Cylinder Attachment which now forms an important part of the Ski-Optometer. In addition to the Ski-Optometer they will exhibit their new Headband Retinoscope as well as their new Ophthalmic Bracket and other optical specialties.

Anesthesia Apparatus and Accessories

A. C. Clark & Co., Space 96, will demonstrate their nitrous oxid-oxygen hospital apparatus equipped with automatic regulators, vapor warmer, rebreathing bag and ether attachment; also the Baby Clark outfit for obstetric and minor surgical purposes; fountain spittoons for office, hospital and sanatorium service, etc. The Foregger Company, Inc., Space 68, will demonstrate by means of the "Gwathmey" Gas Oxygen and Ether Apparatus the simplification of gas oxygen anesthesia by the adoption of the sight feed and control valve system to the large size gas and oxygen cylinders. The "Gwathmey" outfits will no doubt interest every conventionist. The Safety Anaesthesia Apparatus Concern, Space 76, will show the Safety-Gas-Oxygen Apparatus. This apparatus administers a mixture washed, moistened and warmed to a temperature of about blood heat maintaining the correct ratio of oxygen in the mixture. The Scientific Apparatus Company, Space 10, will explain the advantages of the Connell Gas Oxygen Apparatus. With this apparatus you can know the quantity of gas you are delivering and can adjust the required dosage several minutes ahead of the clinical reaction, a feature which makes for safety to the patient and economy of gas flow. The Teter Manufacturing Company, Space 27, will exhibit their new sight-feed regulated pressure gas-oxygen outfit designed for use by hospitals, anesthetists and obstetricians. This outfit shows the nitrous oxid and oxygen flowing through jets in tubes immersed in water.

Artificial Limbs, Corsets and Supportive Appliances

The Barnum-Van Orden Company, Booth 52, will give a demonstration of mechanical support applied to physiologic requirements in conditions of relaxed abdominal musculature and visceroptosis; pathologic cases with histories, roentgenograms and illustrations will be presented. Sacro-iliac supports, maternity corsets, postpartum binders, correct posture corsets and postoperative supports constructed to aid in strengthening the abdominal musculature will also be shown. The Berger Brothers Company, Space 34, will show Spencer corsets and supports for the relief of sacro-iliac strain, visceral ptosis, floating kidney, intestinal stasis and ventral or umbilical hernia; also postoperative supports, maternity supports, etc. The exhibition of the Carnes Artificial Arm, Booth 45, will be made interesting by men actually wearing the Carnes arm, showing the practical use to which it can be put, such as using telephone, carrying suitcase, writing, sharpening lead pencils and various other things which are accomplished by its use. Kops Brothers, Space 140 (mezzanine floor), will demonstrate the "Nemo" Wonderlift Corsets. It is claimed that the "Nemo" combines ultrafashion with the necessary hygienic, supportive features.

Electromedical Apparatus

Burdick Cabinet Company, Booth 101, will feature its line of Electric Light Bath Cabinets. This concern has spent years in engineering effort to place the light bath on a scientific basis. Thompson-Plaster Company, Space 56, will exhibit its combination electrical cabinets, including their 1917 model H. H. New features and improvements have been incorporated and now in a space occupied by one cabinet a physician has at his command an electrical equipment capable of doing a number of things from vibration to Roentgen-ray work without shifting the position of physician or patient.

Miscellaneous

The Barton Manufacturing Company, Space 92, will exhibit anatomic rubber stamps for use on history charts and cards, with a practical demonstration of how rubber stamps are made. They will also show stationery embossers with which one can emboss one's own stationery. The National Pathological Laboratory, Space 111, will show interesting slides of pathologic tissue, and also gross specimens. Attending physicians are requested to call at this booth for information regarding the manner in which this institution does its work. Simplex Account System Company, Inc., Space 62, will exhibit the Simplex System of Accounting and Case Recording in cabinets of different designs; also the Simplex Fireproof Safe System—a step forward in record keeping for the busy practitioner. As suggestions along this line are always appreciated, this exhibit should prove of decided interest.

The foregoing descriptive references do not by any means represent every exhibit, as can readily be seen by referring to the alphabetical list of exhibitors on page 1375. The firms mentioned have been able to supply advance information as to what they expected to show—others unfortunately have not.

Fellows who attend the session should make it a point to go to the exhibit hall daily, as it will be practically impossible in one or two visits to inspect everything and receive the maximum benefit from the demonstrations that will be given.

You are urged to feel absolutely free to examine everything without thinking that you are expected to buy. The men who will be in charge of the booths are competent in their respective lines, and their main object will be to give you intelligent information and satisfactory demonstrations of whatever commodity they are showing. They will be delighted to cooperate with you to employ new suggestions and to interchange opinions as to the worthiness of the articles demonstrated. In this way mutual benefit will result both to you and to the firms represented.

It is the aim of the American Medical Assocition to make the commercial exhibits of educational value. They are "commercial" only to the extent that the articles shown can be bought and that the manufacturer profits by increased patronage after his article has made a correct impression on the physician from a "scientific" standpoint.

Dr. H. S. Stearns, 32 E. Sixty-Fourth Street, New York, is the local chairman of the commercial exhibits; Will C. Braun, 535 North Dearborn Street, Chicago, is the superintendent.

his observation that the addition of small amounts of milk to food mixtures consisting otherwise of purified protein, fats, carbohydrate and salt exerted a favorable influence on nutrition which was out of all proportion to the calorific value of the added milk, and he expressed the belief that there existed certain "accessory food substances" indispensable from the diet. These observations convinced me of the importance of further examination of the lipoid moiety of the diet. In 1912 Miss Davis and I observed the remarkable *stimulating action on growth* of purified butter fat and of the ether extract of egg yolk, when these were added to a mixture of supposedly purified food substances. Lard and olive oil possessed no such properties.[10]

The situation was still not clear. In June, 1912, Osborne and Mendel[11] described experiments in which normal growth curves were secured with rats over a period of sixty days, on a ration consisting of pure protein, starch and "protein free milk," all the constituents being free from substances soluble in ether, and practically free from lipoids of any character.

One phase of the difficulty was cleared up by our observation that when lipoids of suitable character were present in the food mixture, we secured growth when 20 per cent. of the diet consisted of nearly nitrogen free lactose (Merck or Kahlbaum), but were unable to do so when the latter was replaced by starch.[12] Obviously an impurity in the lactose furnished a second unknown dietary factor without which growth could not proceed. The inclusion of lactose with the omission of the fats of milk or egg yolk was, however, attended with failure to secure sustained growth. This was difficult to understand in the light of Osborne and Mendel's temporary success in inducing growth by the employment of ether extracted "protein free milk." The explanation is now available. Simmonds, Steenbock and I[13] have found that the fat-soluble dietary essential is appreciably soluble in water, and that repeated washing of butter fat with distilled water removes from it the substance which is responsible for its peculiar effect in the diet. The water solution of the nonlipoid constituents of milk, therefore, contain this substance, indeed, in considerable amount. Recent experiments lead us to believe that approximately half of the fat-soluble dietary essential is present in the fat and half in the nonfat portion of the milk. It is, therefore, approximately thirty times as soluble in butter fat as in water. "Protein free milk" contains, therefore, both the water and alcohol-soluble dietary essential which is found in many natural foodstuffs and which is the active agent in the cure of polyneuritis, and a small amount of the fat-soluble essential as well.

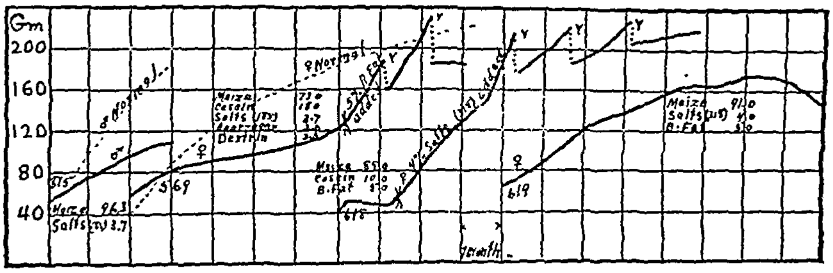


Chart 1.—Results of feeding animals on maize with purified food substances. In this and the following charts, *Y* marks the birth of young.

Observations such as I have described led Miss Davis and me[12] in 1915 to propose the working hypothesis that an adequate diet during growth must furnish, in addition to the well recognized constituents of the diet — protein, carbohydrate, fats and inorganic constituents of adequate character and amounts — two as yet unidentified dietary factors. One is soluble in water and alcohol and apparently never associated with the lipoids, when these are isolated from natural foodstuffs, the other soluble in fats. The latter is extracted from milk, egg yolk, kidney and probably other animal tissues by ether, but is not removed by this solvent from either the seeds or the leaves of plants.[14] The former is universally present in foodstuffs of vegetable and animal origin, but is absent or nearly so from crystalline sugar, starch and fats, and is present in but small amount in polished rice and probably in those foods derived from the endosperm of seeds by milling processes. Where the reaction of the medium is alkaline, strong heating of foods probably leads to its destruction.

Stepp failed to interpret his observations correctly because hot alcohol takes out both of these dietary factors, and when he put back the extract with the extracted residue, both were restored.

Osborne and Mendel could not correctly interpret the cause of their success with "protein free milk" combined with purified foodstuffs because they were adding both these unknown substances, although the amount of the fat-soluble one was inadequate to serve throughout the life of the animal.

I am frequently confronted with the questions: What of the several "vitamins" which have been so eagerly seized on of late to explain such pathologic manifestations as beriberi, scurvy, pellagra and rickets? Do not these several well recognized syndromes, the etiology of each of which is generally believed to be more or less directly referable to inadequate diet, connote the existence of as many "vitamins," each specific in the protection it affords against a type of abnormal metabolism? I am almost convinced that there are but two individual substances, the solubilities and distribution of which I have just described, which constitute the only essential dietary ingredients with whose chemical natures we are not fairly familiar. The possibility remains, of course, that one or both of what I have termed the fat-soluble A and water-soluble B each represent more than a single substance. I shall speak further on this point later.

Employing this working hypothesis, we have examined the nature of the dietary deficiencies of several of the more important natural foodstuffs. The procedure in each case was as follows: The individual foodstuff, maize,[15] for example, we fed (*a*) as the sole source of nutriment; this leads to complete failure of young animals to grow, and death usually supervenes within two months; to another group (*b*) we fed maize plus butter fat to furnish the unidentified dietary factor A; (*c*) maize plus a liberal amount of a complete protein, casein; (*d*) maize plus a salt mixture so constituted as to supplement the inorganic content of maize and give the animal an inorganic supply similar to that which is supplied by milk, a food on which good nutrition with growth is attained. As will appear later, maize contains a liberal amount of the water-soluble B. In all these experiments the behavior of the animals was substantially the same. There was little growth in any case. Of the three additions described, the proper adjustment of the inorganic content is the most beneficial (Rat 815, Chart 1).

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[10] McCollum, E. V., and Davis, M.: Jour. Biol. Chem., 1913, **15**, 167; ibid., 1915, **23**, 231.

[11] Osborne, T. B., and Mendel, L. B.: Jour. Biol. Chem., 1912, **12**, 81.

[12] McCollum, E. V., and Davis, M.: Jour. Biol. Chem., 1915, **23**, 231.

[13] McCollum, E. V.; Simmonds, N., and Steenbock, H.: Proc. Am. Soc. Biol. Chemists, December, 1916; Jour. Biol. Chem., March, 1916.

[14] McCollum, E. V.; Simmonds, N., and Pitz, W.: Am. Jour. Physiol., 1916, **41**, 333, 361.

[15] McCollum, E. V.; Simmonds, N., and Pitz, W.: Jour. Biol. Chem., 1916, **28**, 153.

Obviously more than a single dietary factor is at fault in determining the failure of young rats to grow on maize. We conducted a series of experiments in which maize was fed with two purified food additions: (*e*) maize, salts and casein; (*f*) maize, salts and butter fat; (*g*) maize, butter fat and casein. The results of feeding such diets are shown by the curves in Chart 1. Rat 569 made somewhat less than half the normal rate of growth over a period of five months when both the protein and inorganic content of maize were supplemented. The addition of butter fat at this time caused extremely rapid growth, and during the following three months two litters of young were born, one, the second, being successfully reared. Rat 619, which received maize, salts and butter fat, grew slower than the normal rate and showed decline after the age of 6 months She never produced young. Rat 618, which was given maize, casein and butter fat, did not grow at all during a period of six weeks Four per cent of a suitable salt mixture was then added, with the result that growth was promptly resumed and the animal reached the full adult size at the normal rate and produced three litters of young, all of which were successfully weaned These records are each representative of a group of rats.

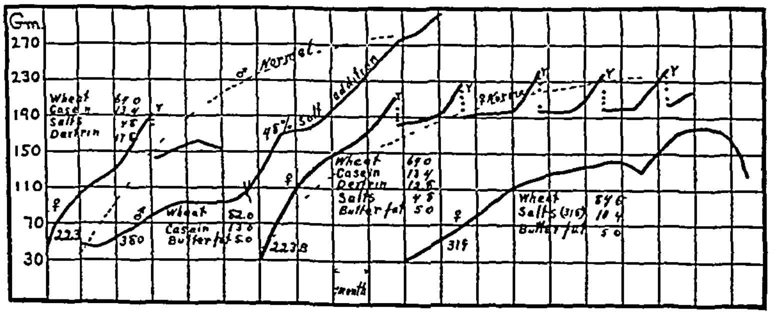

Chart 2—Results of feeding animals on wheat with purified food additions.

TABLE 1—COMPOSITION OF SALT MIXTURES

Salt mixture used with Rats 223, 223B and 380 (Fig 2)	
Sodium chlorid ($NaCl$)	0 668
Dipotassium phosphate (K_2HPO_4)	0 337
Monocalcium phosphate ($CaH_4(PO_4)_2\ H_2O$)	0 284
Magnesium sulphate (anhydrous) ($MgSO_4$)	0 018
Magnesium citrate ($Mg_3(C_6H_5O_7)\ 14H_2O$)	0 068
Sodium citrate (anhydrous)	0 037
Ferrous lactate	0 119
Potassium citrate	0 799
Calcium lactate	2 533
Salt mixture 185 (Figs 1, 4, 6, 8, 10)	
Sodium chlorid ($NaCl$)	0 173
Magnesium sulphate (anhydrous) ($MgSO_4$)	0 266
Monosodium phosphate ($NaH_2PO_4\ H_2O$)	0 347
Dipotassium phosphate (K_2HPO_4)	0 954
Monocalcium phosphate ($CaH_4(PO_4)_2\ H_2O$)	0 540
Ferrous citrate	0 118
Calcium lactate	1 300
Salt mixture 500 (Figs 3, 6, 8)	
Sodium chlorid ($NaCl$)	0 5148
Calcium chlorid ($CaCl_2$)	0 2569
Dipotassium phosphate (K_2HPO_4)	0 3113
Potassium citrate	0 5562
Calcium lactate	2 878
Salt mixture 318 (Figs 1, 2, 6)	
Sodium chlorid ($NaCl$)	1 400
Dipotassium phosphate (K_2HPO_4)	2 531
Potassium citrate	0 710
Calcium sulphate ($CaSO_4\ 2H_2O$)	0 578
Calcium lactate	7 058

Chart 2 illustrates the behavior of rats with respect to growth and reproduction when fed wheat with two purified food additions,[16] casein and salts, Rat 223; casein and butter fat, Rat 380, and butter fat and salts, Rat 319. Rats in Lot 223 in some instances grew rapidly to full adult size, but all were short lived. At the age of 6 months they were all emaciated and showed edema of the eyelids with hemorrhage of the conjunctiva. In Rat 380, which received wheat, casein and butter fat, growth was very slow. After being stunted during five months, on the addition of a suitable salt mixture the animal experienced a wonderful acceleration of growth and complete recovery from a condition of partial baldness, accompanied by a roughness of the skin and tail. Animals in this group have frequently suffered from a purulent bronchitis.

The stunted growth, lack of fertility and early decline which follows the feeding of wheat with salt and butter fat additions is illustrated by Rat 319. When, however, wheat is supplemented *with three* purified additions, casein, salts and butter fat, it becomes capable of supporting growth, reproduction and rearing of the young in a manner which closely approaches the optimum, as is shown by the curve of Rat 223 B.

Wheat and maize are therefore closely similar in their dietary properties. Each requires an improvement in its protein moiety, a suitable supplementing of its inorganic content and an added supply of the dietary factor which I have designated the fat soluble A. Each contains an abundance of the second unidentified dietary essential, the water soluble B, since without any addition of this substance, excellent nutrition can be secured.

Let us consider for a moment the dietary properties of the oat kernel[17] as revealed by feeding it supplemented with single or multiple additions of purified foodstuffs It becomes apparent from an inspection of Chart 3 that the same general relations hold as we have seen in the case of the maize and wheat kernel. The curves are each representative of the performance of a group of not less than four rats. Here, however, the addition of casein, salts and butter fat does not lead to normal nutrition. We have not yet been able to supplement oats with purified food ingredients and attain optimum results, when the oat kernel constituted from 70 to 80 per cent. of the food mixture Gelatin combined with oat proteins forms a much better protein mixture than do casein and oat proteins. This will be made apparent by an inspection of Chart 6, Rat 647. (Compare Charts 6 and 3.) We have not yet determined the cause, but it is evident that a high intake of oats over a long period causes injury to the rat. This is true also for the cow, and I believe also for swine.

The results of testing combinations of two or more kinds of seeds as a restricted diet has proved extremely interesting. The *curves of* four representative rats receiving diets made up on this plan are shown in Chart 4.[17] It proved a great surprise that we were not able to make combinations of the seeds of plants in any way which forms a ration capable of inducing normal growth in the rat, and an extensive experience has all tended to confirm our belief that this is true for swine and probably for other mammals as well. It is possible, however, with rations restricted to seeds, to secure nutrition of at least a fairly satisfactory character with pigeons[14] and possibly also with chickens. Chart 4 shows clearly the dietary factor which forms the most important cause in inhibiting the growth of the rat on these diets. It is the character and amount of the inorganic portion of the food mixture. When this is properly adjusted by means of salt additions, growth can proceed on certain mixtures. After prolonged suspension on Ration 713, the addition of salts led to growth. Equally pronounced failures with rations of this type containing beans or peas are abundant in our records.

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[16] Hart, E B, and McCollum, E V.: Jour. Biol Chem, 1914, **19**, 373 McCollum and Davis: Ibid, 1915, **21**, 615 Hart, E B; Miller, W S, and McCollum, E V · Ibid, 1916, **25**, 239.

[17] McCollum, E V; Simmonds, N, and Pitz, W Unpublished data.

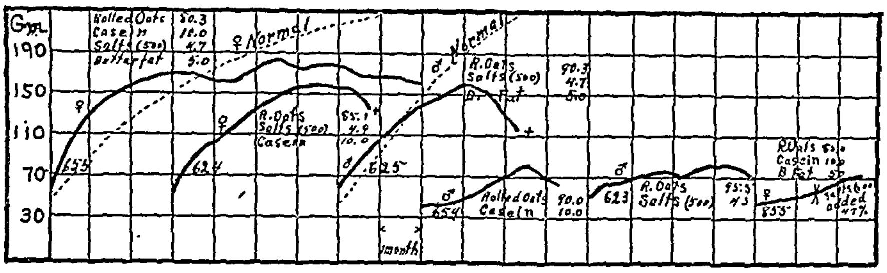

Chart 3.—Results of feeding animals on oats with purified food substances.

In marked contrast to our failure to secure satisfactory nutrition with any of the many combinations of from two to five kinds of seeds stand the nearly normal growth of rats which are limited from an early age to a monotonous mixture of a seed and a leaf. We have tested most thoroughly combinations of the alfalfa leaf with several seeds, since it can be secured as a meal and as a flour, the former being much employed in animal production. The products which we have employed were very fine meal consisting principally of the leaves, but containing visible pieces of stem, and also a flour which was practically entirely derived from leaves. Both products came from immature plants dried in the sun.

Chart 5 illustrates the fact that rats can take from the age of 35 days a mixture of 60 per cent. of any one of at least three seeds, oats, wheat and maize,[17] with 40 per cent. of alfalfa leaves, and grow to a size closely approximating the normal, and produce young. The same proportions between polished rice and alfalfa,[14] peas and alfalfa,[16] and cottonseed flour and alfalfa[17] yield less satisfactory results, but with these growth is far superior to what we have ever observed with the seeds alone in any combinations or proportions, when fed to rats whose water supply was distilled, and therefore salt free.

On Ration 685, oats and alfalfa,[17] fourteen out of the seventeen young were reared. The one litter of five produced by Rat 687 all died soon after birth. Four of the seven young in the litter from Rat 686 were reared. No young have been reared on the polished rice and alfalfa mixture (Rat 478).

Two factors contribute toward making these combinations of seed and leaf superior to seeds alone. First, the inorganic content of the leaf is much greater and is of an entirely different character from that of the seed. In Table 2 are given the average analyses of alfalfa hay, cabbage, wheat, oat and corn kernel, potato and milk.

It is fortunate, indeed, that the inorganic content of the seed and the leaf supplement each other in a manner which meets the demands of mammalian physiology. The second way in which the leaf supplements the grain is in respect to the as yet unidentified dietary factor, fat-soluble A. This substance is present in the alfalfa leaf to the extent of at least five times the amount in the maize kernel, so that any diet containing 30 per cent. or more of this leaf is not enhanced by the inclusion of butter fat. Cabbage and clover leaves also are rich in this dietary essential, but our experience with these is less extensive. There is to be expected, of course, a supplementary relationship among the proteins of a mixture of two or more foodstuffs. It could hardly happen that the proteins from several sources would be particularly low in their content of the same amino acids. That the limiting amino acid is not the same in several of the more important seeds is made evident by the curves shown in Chart 6. Rats 652 and 493 received a similar food mixture, except that the former had 10 per cent. of gelatin supplementing wheat proteins in place of an equivalent amount of dextrin. The gelatin-containing diet promoted growth at a rate greater than the normal expectation, as compared with a rate about half normal in the gelatin-free control.[18]

TABLE 2.—AVERAGE ANALYSES OF VARIOUS FOODS IN ONE HUNDRED PARTS OF DRY SUBSTANCES *

	Total Ash	K	Na	Ca	Mg	Cl	P	S
Alfalfa..	7.380	1.641	0.097	2.146	0.223	0.298	0.338	0.172
Cabbage	10.850	2.510	0.805	1.663	0.234	0.853	0.853	0.372
Wheat...	2.080	0.504	0.026	0.041	0.141	0.058	0.408	0.009
Oat......	1.830	0.361	0.058	0.097	0.086	0.098	0.385	0.005
Corn.....	1.450	0.359	0.012	0.023	0.136	0.013	0.289	0.005
Potato..	3.79	1.890	0.083	0.072	0.113	0.131	0.279	0.009
Milk.....	5.67	1.160	0.344	0.909	0.038	0.701	0.650	0.037

* From Forbes, Bull. 207, Ohio Expt. Station.

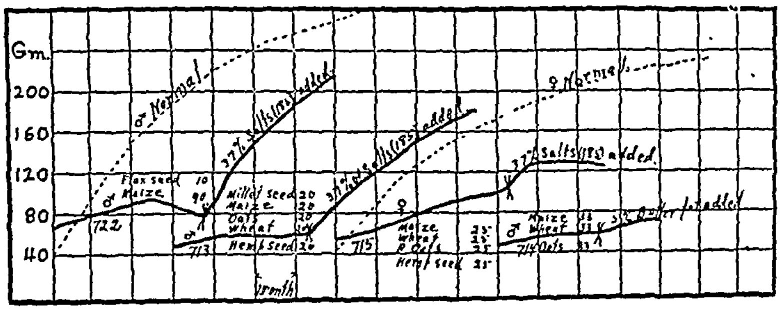

Chart 4.—Failure of rats to grow when restricted to a diet of seeds. The limiting factors are the inorganic content and the fat soluble A.

The second pair of curves, Rats 756 and 785, received rations alike in all respects, except that in the former the protein content (19.9 per cent.) was derived solely from a mixture of peas and gelatin[17] and the latter from a mixture of navy beans and gelatin.[17] In neither do the rations promote appreciable growth, although the entire group receiving beans grew noticeably better than did those getting peas. Gelatin does not supplement efficiently the proteins of either the pea or bean. In the second period in each case casein was substituted for the gelatin with the result that growth began at once at a fairly good rate. The proteins of the pea or the bean, when taken as the sole source of nitrogen, are of very low biologic value.[17]

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[18] McCollum, E. V.; Simmonds, N., and Pitz, W.: Jour. Biol. Chem., 1917, 28, 483.

An inspection of the curves of Rats 647 and 646 shows that gelatin has a very favorable supplementary relation to the oat proteins.[18] Gelatin when combined with the proteins of the maize kernel does not enhance the value of the latter.[18]

In 1914 we repeated the efforts of Slonaker[19] to find the effects of a strictly vegetarian diet of wide variety, on the growth of the rat. We offered nineteen different foods of vegetable origin, giving the animals five or six at a time and changing their bill of fare at intervals of a few days. The list of foods included grains, leaves of plants, nuts, corn and wheat germ, peas and flaxseed meal. None ever grew beyond half the adult size.[14] We duplicated in all essentials the results which Slonaker had observed. Having gained some insight into the peculiar dietary properties of certain natural foods, I predicted two years ago that a mixture of maize 50, alfalfa leaves 30 and heated peas 20 would adequately nourish a young rat during growth. A trial proved that this strictly vegetarian food mixture induced satisfactory nutrition during growth, and supported repeated reproduction and rearing of a fairly large percentage of young.[14] Chart 7 shows the curves from left to right of mother, daughter and granddaughter. A litter of great grandchildren were successfully weaned and appeared entirely normal when we discontinued the experiment. I should like to emphasize the importance of a proper adjustment of the well recognized dietary factors by pointing out that no young would be reared if this diet were changed to include less than 20 or more than 45 per cent. of alfalfa, the maize replacing or being replaced by alfalfa in the adjustments

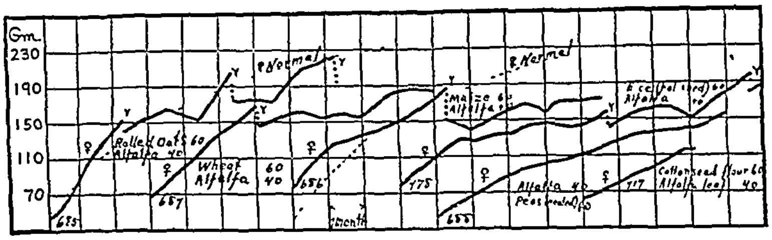

Chart 5.—Good growth promoting ration which a combination of one leaf and one seed may produce.

In Chart 8 are shown representative curves showing the failure of the proteins of either peas or navy beans to supplement very efficiently the proteins of the maize kernel,[17] Rats 779 and 780. In either of these rations the peas or beans could be replaced by dextrin, and a curve of nearly the same shape would be secured. Both pea and bean proteins improve the proteins of the wheat kernel,[17] Rats 783 and 784, for these curves are much better than would be secured if the legume seed were replaced by carbohydrate (Chart 1, Rat 619; Chart 2, Rat 319). The most remarkable result of studying these combinations is seen in the very different results of supplementing oat proteins with bean proteins as contrasted with peas. Pea proteins are wasted when combined with those of the oat, while the proteins of the navy bean and oat mutually make good each other's deficiencies,[17] Rats 782 and 781. It follows, therefore, that the proteins of the pea and the bean are very dissimlar in respect to their yields of certain amino acids, and that the same amino acid is not the limiting factor in each.

In Chart 9 are presented curves obtained with a series of diets designed to show the relative richness of the fat-soluble A in several natural foodstuffs. The diet, aside from its content of natural food, consisted of such a mixture of purified food materials as would support growth, when both the unidentified dietary factors, the fat-soluble A and water-soluble B, are added. The rôle of the natural food in these rations was to supply these two factors.[17] These curves make it clear that about 30 per cent. of alfalfa leaf is the minimum amount which will supply the fat soluble A in amount sufficient to induce complete growth and induce the production of a few young. The young were not reared on this ration.

In Charts 1, 2 and 3, curves were shown which illustrate that even 70 per cent. of corn, wheat or oat kernel do not furnish enough of the dietary A to support complete growth and repeated reproduction and well-being over the full span of life.

It is of particular interest, therefore, to compare the effects of flaxseed and millet seed as sources of the fat soluble A. Both of these are richer in this substance than are the cereal grains, and millet seed proves to be unique among the seeds we have examined as a good source of this dietary factor. When 25 per cent. of millet seed was combined with purified foodstuffs, growth was completed and one rat has produced two litters of young. After eight months on this diet she appears to be in perfect nutrition. The slow but long continued growth on these rations, whose content of both unidentified dietary factors was solely derived from such small amounts of hemp seed, flaxseed and millet seed, shows that these stand intermediate between the cereal grains on the one hand and the plant leaf on the other as sources of the fat-soluble A.[17]

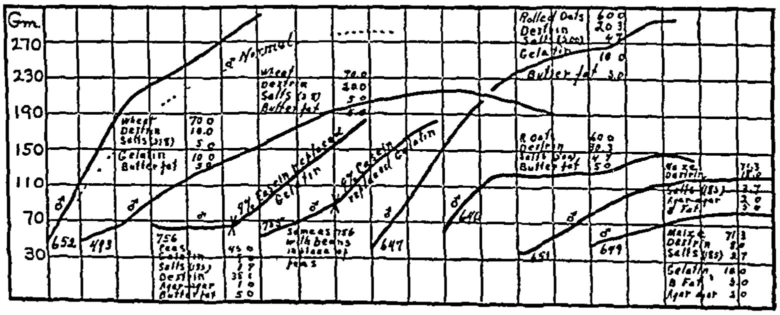

Chart 6.—Value of gelatin in supplementing the deficiencies of the wheat and oat kernel, but not those of maize, beans or peas.

We have carried out a series of experiments designed to show the minimum amount of several seeds which are necessary to supply enough of the water-soluble dietary essential for the completion of growth and the production of young. Chart 10 illustrates the results of this inquiry. The diet in all cases consisted of a purified food mixture, to which was added 5 per cent. of butter fat to insure an adequate supply of the fat-soluble A. The sole requirement of the portion of natural food incorporated in the food mixture was to furnish the water-soluble B.

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[19] Slonaker, J. R.: Leland Stanford Junior Univ. Pub Univ, Series 1912

While 15 per cent. of either maize or oat kernel fails to induce growth at the maximum rate, 15 per cent. of wheat not only enables the animals to complete their growth, but also induces sufficiently good nutrition to lead to *repeated reproduction.* However, no young can be reared on either of the two lowest wheat rations here described. The factor which is responsible for this failure is the low content of the water-soluble B (Chart 2, Rat 223 B). Peas and beans likewise are shown to be rich in this dietary essential, but they are both poor in the fat-soluble one.[17] The fact that Rats 744 and 743 did not respond promptly with renewed growth on the addition of an alcoholic extract of wheat germ containing additional water-soluble unknown is without significance. After a long period of stunting, response to improved diet is not always immediate. Diets deficient in one factor only and for this reason leading to suspension of growth do not all lower the vitality of the animals in the same degree. The extent of the debility determines whether they can respond promptly with growth when the diet is improved.

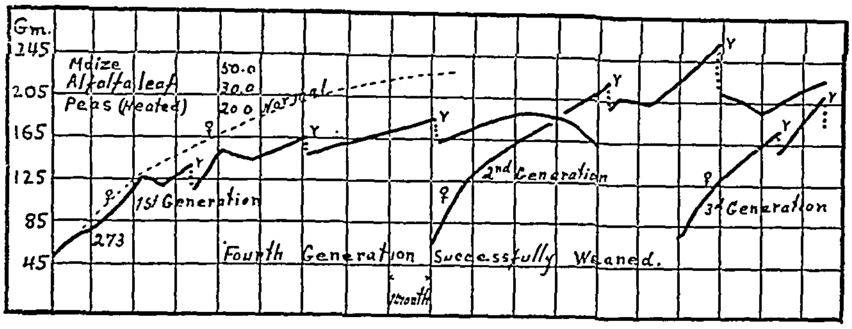

Chart 7.—Results of feeding a properly constituted, strictly vegetarian diet to the rat.

I desire next to attempt to offer an interpretation of certain experimental and clinical evidence which may seem to be out of harmony with the simple working hypothesis regarding the essential factors which are concerned in making a diet adequate, and with which I have attempted to explain the cause of the failure of animals to be adequately nourished on a considerable number of diets from various sources. I refer especially to the theory of Funk, which has found wide acceptance, that no less than four syndromes recognized as distinct pathologic states, namely, beriberi, scurvy, pellagra and rickets, are all referable to inadequacy of the diet, and that each is the result of the lack of an adequate amount of a *particular chemical substance* in the food. To these Funk gave the general name "vitamins." In seeking the cause of the inadequacy of certain diets I have dispensed with all but two unidentified substances.

There are two lines of evidence which offer strong support of the validity of the assumption that in the case of the factor which I have called the water-soluble B we are dealing with a single substance rather than with two or more. The first is based on the results of feeding such rations as are described in Chart 10 in which all of this factor is supplied by as little as 15 per cent. of wheat, or 25 per cent. of peas or beans, alfalfa, etc. We have tested a list of foods which includes four grains (wheat, oat, maize and millet), two legume seeds (peas and beans), three varieties of leaf (clover, alfalfa and cabbage), and three oil seeds (hemp, flax and cottonseed), and find that in all these about 15 to 20 per cent. is all that is essential, with a mixture of purified foodstuffs and butter fat, to promote growth at the normal rate. While this does not establish the conclusion, we may reasonably expect that if the dietary factor B consisted of two or more chemical substances essential for normal metabolism, we should discover in some of these natural foodstuffs a shortage of one as compared with the other, in greater degree than is actually the case.

The second line of evidence which supports the idea that we are here dealing with a single chemical substance rather than several is to me still more convincing: A mixture of purified food substances becomes capable of inducing vigorous growth when 3 per cent. of wheat germ supplies the factor B and 5 per cent. of butter fat the factor A. Now the wheat embryo can be completely extracted with ether without losing its potency in the least degree. The ether extracted residue we have extracted for eighteen hours in a continuous extractor with hot benzene in one instance and with hot acetone in another. The extracts obtained with benzene or acetone will not induce growth when combined with the purified food mixture containing butter fat, even when the extract equivalent to 28 per cent. of wheat germ is added. In either case, however, 3 per cent. of the ether-benzene or ether-acetone extracted residue is still as effective as ever. Now rats which are at all depleted with respect to the factor B do not recover when only 2 per cent. of wheat germ is present in the ration. They do recover from a condition of extreme weakness, and partial paralysis on our ration with the extracted germ to the extent of but 3 per cent. While large doses of the material extracted from wheat germ by hot benzene or acetone contain enough of the factor B to cure a pigeon of polyneuritis, the amount of the curative substance extracted by these solvents is almost negligibly small.

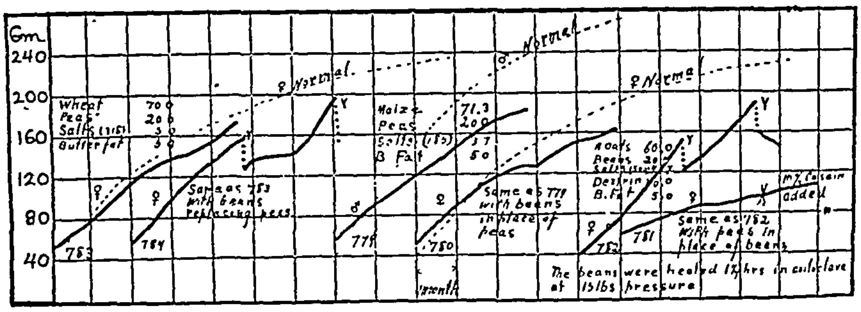

Chart 8.—The supplementing of the proteins of wheat but not those of maize or oats by the proteins of the pea. The supplementing of the proteins of wheat and oats, but not those of maize, by bean proteins.

The point I would emphasize as of significance in these results is the very small probability that if there were present two or more chemical substances indispensable for the maintenance of physiologic well-being, both or all should be practically completely insoluble in both these solvents as well as ether, and that both or all should be readily soluble in water and in alcohol. It would seem a remarkable coincidence if several compounds should show such complete uniformity in their solubilities, stability toward heat and so close a parallel in the proportions in which they occur in the seeds and leaves of widely different orders of plants. When contrasted with the great variation in the content of the fat-soluble essential in different seeds, and the richness of the leaf as compared with the seed in its content of this substance, it becomes the more improbable that in plant tissues generally there should exist a definite proportion between the remaining essential substances, whatever their number.

I am conscious of the question which will be asked concerning the cause of scurvy and of beriberi. Are not these both dietary deficiency diseases? During the past two years Mr. Pitz and I[20] have repeated all the more important work reported by others on the production by diet of experimental scurvy in the guinea-pig. We have confirmed the observations of Jackson and Moore to the effect that with a diet of oats and milk *ad libitum,* scurvy ordinarily results. Rolled oats induce the onset of the symptoms sooner than unhulled oats. Only those diets which produce feces of a character readily eliminated will relieve or prevent the disease. Milk to the extent of 10 per cent. of the solids of the diet supplies all the unidentified dietary factors necessary for growth in the rat or swine and probably for other mammals as well. We are convinced that the guinea-pig suffers from scurvy on a diet of oats and milk because of the constipating character of the diet. Oats produce pasty feces, and the guinea-pig, being unfortunate in the anatomy of its digestive tracts, is quickly debilitated by its inability to empty the large and delicate cecum. This harmonizes with our observation that orange juice, the panacea for scurvy in the human infant, gives protection to the guinea-pig, but is not so efficient as to enable this species to take an oat and milk diet and grow continuously over a long period. We have furthermore been able to effect a complete cure of guinea-pigs on a milk and oat diet after they could no longer walk, and showed badly swollen joints and the hemorrhage of the gums, by liberally dosing them with liquid petrolatum. Cavies so relieved have been as active and healthy as if on a diet of green grass, and have resumed growth and have continued to grow steadily, though at a rate slower than the normal during three months following the attack of scurvy, while confined to the same milk and oat diet which gave them the disease. The petroleum oil treatment was of course persevered in throughout this period. I question whether any one would postulate the existence in petroleum oil of a "vitamin" specific as a protection against scurvy.

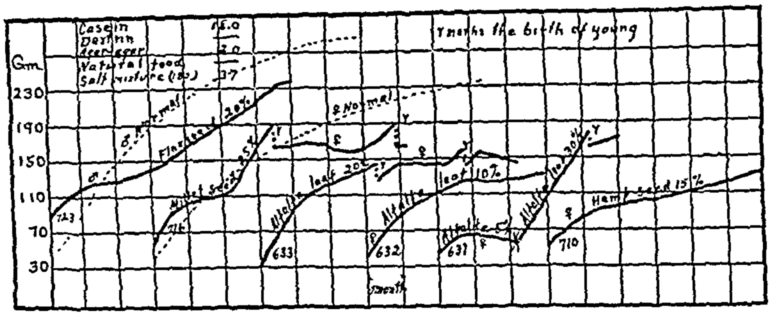

Chart 9.—Purified foodstuffs with small natural food additions; no butter fat.

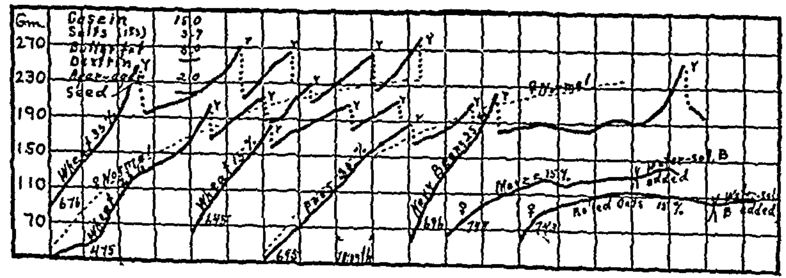

Chart 10.—Purified foodstuffs with small natural food additions, with butter fat.

I venture to suggest that the failure of Holst[21] and his co-workers to prevent or relieve scurvy in guinea-pigs by feeding dried cabbage finds its explanation in the failure of the latter to take up water in the intestine and again act as a succulent vegetable.

On the basis of anatomic lesions and for other reasons, Hess[22] has recently suggested that scurvy and beriberi show more points of similarity than have been recognized by clinicians, and was inclined to consider the two as essentially the same pathologic condition. His efforts toward curing scurvy with wheat germ and with yeast were unsuccessful, whereas orange juice was potent as a curative agent, and he was forced to conclude that the two conditions were distinct. I will offer the suggestion that the latter view is correct. Scurvy in the guinea-pig is the result of the retention of feces. I do not know whether or not the same is true of human scurvy. Neither do I know the cause of the hemorrhage of the joints and gums, whether they are the result of the absorption of a toxic substance of bacterial origin, which injures the blood vessels, or whether they are due to the invasion of the tissues by an organism, through an injured cecal wall. The recent observation by Jackson and Moore of a streptococcus in the congested joints is suggestive in this connection.

I am inclined to attribute the protective power of orange juice as an antiscorbutic to its content of certain salts of citric acid, rather than to the presence of an unidentified organic substance of the class of the so-called vitamins. Its efficiency for the guinea-pig appears to be somewhat less than for the human being. This may well find its explanation in the much more delicate and inefficient structure of the digestive tract of the cavy as compared with that of man, so that less efficient protective agents may serve for the latter than for the former. While guinea-pigs are protected against scurvy by orange juice, we have not seen them grow to any appreciable extent on a diet of oats and milk fortified with orange juice. If the results of experiments of three months' duration are to be trusted, orange juice appears no more efficient than petroleum oil in protecting guinea-pigs against scurvy when the animals are kept on a diet of oats and milk.

That beriberi is a disease of dietary origin there is no doubt. That it can be relieved in the fowl by the extracts which contain the dietary factor B is equally certain. Much less definite statements can be made regarding the other diseases, rickets and pellagra, which Funk has attributed to lack of specific substances in the diet. The evidence, as I understand it, seems to point strongly toward diet as at least an important contributing factor. Assuming that they as well as beriberi are of nutritional origin, I venture to state that they are the result of unsatisfactory adjustments among the well recognized constitutents of the diet rather than to the lack of specific chemical substances. I have shown how diets may be so designed as to induce faulty nutrition as the result of the shortage of each of the two unidentified dietary factors A and B; of the inadequacy of the protein content, because of an unsatisfactory yield of amino acids and as the result of an unsatisfactory composition or inadequate amount of the inorganic content of the food mixture. I may add to these a fifth, namely, malnutrition as the result of the presence of toxic substances in the natural foodstuffs, particularly cottonseed and wheat products, and perhaps also a sixth cause due to mechanical injury to the digestive tract caused by foods (for example, oats) producing feces of unfavorable character, and by constant distention of the alimentary tract as the result of excessive fermentation of foods, such as beans and peas, which contain a large amount of hemicelluloses.

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[20] McCollum, E. V., and Pitz, W.: Unpublished data.

[21] Holst and Frohlich: Ztschr. f. Hyg. u. Infektionskrankh., 1912, 72, 1.

[22] Hess, A. F., and Fish, Mildred: Infantile Scurvy: the Blood, the Blood Vessels and the Diet, Am. Jour. Dis. of Child., December, 1914, p. 385. Hess, A. F.: Infantile Scurvy: The Journal A. M. A., Sept. 18, 1915, p. 1003; Proc. Soc. Exper. Biol. and Med., 1915, 13, 50; ibid., 1916, p. 145; Am. Jour. Dis. Child., August, 1916, p. 152.

I have attempted to show, so far as experimental data are available, the specific dietary properties of our natural foods, and how these may be so combined as to make good each other's deficiencies and shortcomings. In presenting these data it has also been emphasized how great is the need of more knowledge in this field. It is indeed remarkable how difficult it is to secure combinations of natural foods which will serve as monotonous diets over a long period and promote in an entirely satisfactory way the well-being of an animal. The consumption of a varied diet makes in some degree for safety, but will by no means insure safety. It remains to be seen whether or not the animals which we have brought to a condition of nutritive disaster by a series of diets, each of which was faulty in respect to but a single dietary factor, as inorganic salts or protein, or the unknown A or B, will reveal to the histologist and pathologist lesions analogous to those seen in the states of human malnutrition presumably of dietary origin. The inadequate diets of man are probably never highly satisfactory with respect to all factors but one. Rather they are in some degree unsatisfactory with respect to two or three dietary factors simultaneously, and the probability that they will be so increases greatly as the food supply tends to be limited to the seeds of plants, and such manufactured products as are derived from the endosperm of seeds. The time will doubtless come within a few years when specific advice can safely be given as to the best way to plan a variety of human dietaries; but a consciousness of the paucity of our knowledge concerning the peculiar supplementary relationships among our natural foodstuffs forbids more than a general statement as to the safest policy now.

A diet in which the seeds of plants form the principal part will be made more safe by the judicious use of milk and of the leaves and probably also of the tubers of plants. These have peculiar dietary properties which the best chemical talent of today fails to recognize, but which are readily demonstrable by biologic tests.

APPLICATION OF THE COMPLEMENT-FIXATION TEST TO TUBERCULOSIS

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During recent years much experimentation has been carried out in determining the value of complement-fixation reactions for the diagnosis of tuberculosis.

Results obtained by different workers show considerable variation. When, however, it is remembered that the value of the test is entirely dependent on the specific action of the antigen and that the antigens used by the many investigators have been prepared by widely divergent methods, it is to be expected that the results should be somewhat dissimilar. At best, we are but feeling our way toward a common understanding of the relation which our laboratory findings bear to the disease itself, and the test will eventually be established as of practical value only by a thorough comparison of all careful investigations rather than by the consideration of the work of any one person.

Several experimenters have obtained results of much promise, but on account of cross fixations with syphilitic serums or because of positive reactions in a certain percentage of nontuberculous cases, the test has not seemed sufficiently reliable to warrant its ready adoption as a routine test in diagnostic laboratories.

Miller and Zinsser[1] of Columbia University, New York, claim an accuracy of nearly 100 per cent. for complement fixation in the detection of active tuberculosis. They used an antigen made up of ground tubercle bacilli in physiologic sodium chlorid solution.

Preparation of this antigen is thus described:

"Twenty mg. of the moist tubercle bacillus mass are weighed out, placed in a conical 15 c.c. centrifuge tube, and to it are added 90 mg. of table salt. With a glass rod, filed to roughness at the end, this paste is ground by hand for about one hour. Distilled water is then added to isotonicity, that is, 10 c.c. to the quantities described above. This is the antigen. Just before using, it is shaken up and the heavier particles are allowed to settle in the course of a few minutes. Except for the removal of these larger elements, the suspension is used as a whole without centrifugation and without filtration."

It seemed to us that it would be of much interest and value to run a series of tests with the Miller antigen since the Miller figures, if confirmed by other investigators, place the test on as accurate a basis as can be claimed for the Wassermann reaction.

Through the courtesy of Dr. Carl C. MacCorison, superintendent of the North Reading State Sanatorium, and of Dr. F. X. Mahoney, health commissioner of Boston, arrangements were made for the furnishing of specimens together with brief, but carefully drawn, histories of the cases from the sanatorium, and for the opportunity of running the tests in the health department laboratory.

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[1] Miller and Zinsser: Proc. Soc. Exper. Biol. and Med., 1916, 13, 134-138.

In addition to the "Miller antigen," S. A. Petroff's Antigens 1, 2 and 3 were also carefully tested in some of these cases.[2] In our hands, however, these antigens did not give as good results as did Miller's antigen. This was especially true of Petroff's Antigen 1 on account of its rapid deterioration. Petroff's Antigens 2 and 3 gave results consistent with those obtained by Miller's antigen, but were measurably weaker.

It was decided to make two series of experiments, the first to consist of specimens from patients with known tuberculosis in order that the laboratory men might become familiar with the reactions to be expected, while the second series was to consist of specimens from all grades of tuberculous, from nontuberculous, and from doubtful cases. The last class of cases was to provide some indication as to the test for specificity.

The blood specimens were drawn in the usual manner from patients and employees at the North Reading State Sanatorium. This institution has a resident population of 200 patients and a large staff of employees. The bloods were sent directly to the laboratory by messenger usually on the same day as they were drawn.

GROUP 1—KNOWN TUBERCULOUS PATIENTS

Anticipating some variation in the reactions of the serums which the first group of seventy-seven known tuberculous patients were to afford, we decided at the outset that some simple classification of the cases tested would be necessary. As a basis for this arrangement there were prepared brief typewritten statements, one for each patient from whom a blood specimen was to be drawn, giving a clear account of the stage of disease and, more particularly, of the clinical picture existing at that time. These notes were then set aside for study when the laboratory findings were reported.

TABLE 1—RELATION OF RESULTS TO STAGE OF DISEASE PROGRESS IN SEVENTY-SEVEN KNOWN TUBERCULOUS PATIENTS

Reaction	Far Advanced	Advanced	Moderately Advanced
Strongly positive	3	28	5
Moderately positive	2	15	1
Weakly positive .. .	2	8	1
Delayed negative	3	7	1
Negative............. ..	0	1	0
Totals.	10	59	8

The stage of disease roughly indicates the extent of lung involvement. Table 1 gives the relation of results to the stage of disease progress. It appears that the far advanced class gave on an average the weakest reaction, while the advanced class averaged a much stronger reaction, and over one half of the still earlier moderately advanced class gave a strongly positive record. The last fact is significant when one considers the practicability of the test for diagnostic purpose, its value in this set of experiments seeming greater for the earlier rather than the later stage of the disease.

The evidence seems to favor the belief that the amount of complement-fixing bodies in the blood may measure the patient's resistance against the disease progress, for clinically, resistance is at a very low ebb in the far advanced patient.

A patient having advanced pulmonary signs may yet have an excellent resistance, while another patient having a much smaller lung focus is overcome by the intensity of the disease reaction. Accordingly, the classification by stage of disease was not sufficiently broad to allow for all the variations in results.

TABLE 2—RELATION OF RESULTS TO THE CLINICAL CONDITION OF SEVENTY SEVEN KNOWN TUBERCULOUS PATIENTS

Reaction	Gaining		Holding		Losing
	Exercise	Rest	Exercise	Rest	
Strongly positive. ...	9	8	5	9	5
Moderately positive...	5	0	1	8	4
Weakly positive	2	2	0	3	4
Delayed negative......	0	0	0	1	10
Negative...............	0	0	0	0	1
Totals...........	16	10	6	21	24

A second table, dealing with the first group of seventy-seven known tuberculous patients having positive sputum, shows the relation of results to the clinical condition of the cases tested.

For practical purposes clinically we wish to know whether a patient is gaining or losing in general condition or remaining stationary. Furthermore, we wish to know the patient's reaction to exercise. Experience might show in a given case that a patient would gain if at rest in bed, or at least on a minimum amount of exercise, and yet would quickly relapse and show disease activity on a slight increase in exertion. Another patient would gain steadily, even though his exercise was proportionately increased.

These two patients would each be classed as "gaining," and yet there would be a material difference between the measures of their resistance and also between the intensities of their respective infections. Therefore, under "Gaining" and "Holding," in Table 2, a distinction is made according to whether or not the patient is on daily exercise or at rest. It is understood that patients losing are not on exercise.

A patient's resistance from the point of view of sanatorium treatment is in this way measured by the amount of exercise he can stand without showing clinical signs of disease activity. Craig[3] has shown that a case may be clinically inactive and yet have an active infection, as would appear from a positive complement-fixation test. Unless we made some attempt to show the conditions under which the patient is active or inactive clinically, we believe that classification would not be complete.

In Table 2 it will be noted that there were ten delayed negative and four weakly positive reactions in the "losing" class of patients. Three of these fourteen patients have since died, succumbing to a rapidly progressing disease. Here again we see that a weakly positive or negative reaction is coincident with a rapidly failing resistance. On the other hand, one patient reacting as weakly positive while suffering an acute relapse returned a strongly positive reaction several weeks later when he had pretty well recovered from this indisposition. Therefore, it would seem that complement fixation in a way discloses the amount of resistance which the patient clinically active has available with which to fight disease activity.

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[2] A description of these antigens may be found in the proceedings of the Twelfth Annual Meeting of The National Association for the Study and Prevention of Tuberculosis, 1916, p 214

[3] Craig, C. F: Observations upon Complement Fixation in The Diagnosis of Pulmonary Tuberculosis, Am Jour. Med. Sc., 1915, 150, 787.

Table 2 shows little difference between the reactions occurring in the exercise and rest columns. It should be remembered, and some discount made for the fact, that the patients gaining on exercise are getting better and that therefore their disease processes are lapsing into quiescence; therefore their serums would not give such regularly positive results as do those of patients gaining or holding but not on exercise, in many of whom there must be invariably active foci. There may be inactive foci in patients of the latter class which on the slightest stimulation from exercise would readily become active and perhaps be evidenced by clinical symptoms. This sort of inactivity would be in harmony with a "weakly positive" complement-fixation reaction in the holding but not on exercise class.

In the nonexercise class with probable active foci and with clinical findings promising considerable resistance to the disease, positive reactions, as shown by the table, appeared in a large majority of the cases, while patients "gaining" or "holding" who give weak positive reactions may be those in whom the disease is quiescent; therefore these patients present no active resistance.

TABLE 3.—COMPARISON OF LABORATORY FINDINGS WITH CLINICAL HISTORIES

Reaction	Tuberculosis						Probably Nontuberculous	Healthy	Stage of Disease				Positive Sputum
	Gaining		Holding		Losing	Arrested							
	Exercise	Rest	Exercise	Rest					IV	III	II	I	
Positive	7	5	3	3	2	2	3	0	1	9	9	1	16
Moderately positive	2	1	1	0	1	2	0	0	1	1	4	0	2
Weakly positive	1	0	0	1	2	1	2	0	0	1	2	0	3
Delayed positive	2	0	1	1	0	2	3	2	0	2	2	0	5
Negative	1	0	1	0	2	4	11	9	0	3	1	0	4
Totals	13	6	6	5	7	11	19	11	2	16	18	1	30

GROUP 2.—PERSONS WHOSE CONDITION AS RELATED TO TUBERCULOSIS WAS UNKNOWN TO THE LABORATORY WORKERS

The second group of patients tested comprised those with pulmonary tuberculosis, those doubtfully tuberculous, and healthy persons. In all seventy-eight specimens were submitted from this group. Tables 3 and 4 illustrate this material with respect to the reaction obtained.

Notes on the clinical conditions of the patients were prepared at the same time as the bloods were drawn and in the same manner as for those in Group 1. Also, statements were made if the individuals were healthy or believed to be nontuberculous. These notes were set aside and not referred to until the laboratory findings were reported. In this way there was no opportunity for bias of opinion either by the laboratory man or clinician when the results were summed up and coordinated.

A study of Table 3 shows that out of forty-eight cases of clinical tuberculosis twenty-nine gave a strongly or moderately positive reaction, while fourteen were either delayed negative or negative. Those giving a strongly or moderately positive reaction are for the most part patients who have a strong resistance to the infection and either are gaining or holding their own.

Of the fourteen negative or delayed negative cases, six were apparently arrested cases, three were gaining with exercise, two were holding their own with exercise, one was holding with rest, while two were definitely losing. In these fourteen patients with varying physical conditions, there must appear to be one agreed and common condition, and that is that their blood contained but small amounts of antibodies to the tubercle bacillus. In twelve of the cases this might be on account of quiescence of the disease, while in the other two it might be explained by a lack of resistance to an overwhelming infection.

Of nineteen cases designated as probably nontuberculous, three gave a strongly positive reaction. The histories of these three patients as taken at the time the specimens were forwarded are as follows:

Case 1 (1892).—I 35, W. B. "Doubtful." This man is an employee, but was one time a patient at the sanatorium with bronchiectasis, probably nontuberculous. His sputum was never positive for tubercle bacilli, and the physical signs in his lungs were atypical for tuberculosis. This man is holding up well as an employee and working a full day.

Case 2 (2252).—J 62, Celia D. "Doubtful." Probably nontuberculous; has bronchitis secondary to asthma. Sputum always negative for tubercle bacilli after repeated trials. We believe strongly that this patient has not tuberculosis, although she is a sick girl and only improved lately from a bed case. She has pulmonary disease, also a luxuriant growth of nasal polyps, and a negative complement-fixation reaction would help very much as a differential guide.

Case 3 (2172).—J 10, E. M. "Doubtful." Patient examined recently but no disease activity noted in lungs. He gave up exercise mentioned in the last note saying that he was not feeling well; however, he felt able to go out on his four days' visit. Patient's sputum has never been positive for tubercle bacilli, and the only lung lesion made out is a possible old healed focus at the left apex. Patient has probably chronic endocarditis and at any rate mitral regurgitation and stenosis. Signs in lung may be referable to cardiac disease.

It is probable that these three cases are tuberculous. Two more cases with weakly positive findings must still be considered doubtful, while the evidence in the other fourteen indicates absence at least of any active tuberculosis. These fourteen patients are on active exercise except one in whom the signs and symptoms differentiate in favor of cardiac disease rather than pulmonary infection.

The eleven specimens from healthy persons were all either negative or delayed negative.

Leaving out of consideration the eleven "arrested" cases, we have thirty-seven cases of active tuberculosis. There are but three cases in Stages I and IV of the disease all giving positive findings. Of the eighteen cases in Stage II, fifteen, or 83 per cent., were positive, and eleven of sixteen cases, or 69 per cent., in Stage III.

As shown in Table 3, there were but thirty of these seventy-eight cases with positive sputums. Deducting eleven cases of healthy persons having no signs of tuberculosis leaves thirty-seven cases in which this valuable diagnostic aid was absent. To one skilled in the examination of such patients, many of these could be classed as tuberculous with but little difficulty. By the average physician, however, many of these cases might be classed as nontuberculous because of the negative sputum. It is in this class of patients especially that a complement-fixation test would be of value to the attending physician as an aid in diagnosis. These cases may be summarized in Table 4.

We are inclined to believe that the three positive cases which were classed as probably nontuberculous when the specimens were taken may have active lesions which were not revealed by the physical examination.

In this table also it will be noted that there are four cases "probably tuberculous" but reacting negatively. Two represent specimens from the same patient who apparently had an arrested case. The other two cases are also apparently arrested.

TABLE 4.—CASES WITH NEGATIVE SPUTUM, DIAGNOSIS DOUBTFUL

Reaction	Probably Tuberculous	Probably Nontuberculous
Positive	6	3
Moderately positive	5	0
Weakly positive	2	1
Delayed negative	1	6
Negative	4	9
Total	18	19

Since the Boston Health Department Laboratory is doing the Wassermann test as a routine procedure, it was decided to test all serums submitted for this specific test with the tubercle bacillus antigen. In this way some light might be thrown on the matter of cross-fixation. A total of 912 such tests was made. Of these 221 were positive and 691 were negative for the Wassermann reaction.

Of the 221 positive Wassermann tests, complement fixation for tuberculosis gave 21 positive, 13 moderately positive, 16 delayed negative, and 171 straight negative. Of the 691 negative Wassermann tests, 55 reacted positively for tuberculosis, 35 moderately positive. There were 21 delayed negative and 580 negative reactions.

We were unable to obtain clinical histories in many of these cases to confirm the specificity of the tuberculous reactions; but the evidence seems conclusive that there is no cross-fixation with syphilitic serums.

The percentage of positives, 15, seems higher than would be expected; but when we consider that tuberculosis causes the death of about one person in every ten and that careful observers calculate at least three living active cases to each death, perhaps this percentage is not excessive, especially among that class of patients who appear for free Wassermann tests.

From our observations it appears that the test is specific for tuberculosis, although perhaps the number of tests from nontuberculous cases is too few for a definite statement to that effect. Miller[4] reports: "Nontuberculous and normal patients react negatively: 144 cases: all negative."

In the diagnosis of tuberculosis it is not to be expected or desired that the complement-fixation test should replace the ordinary examination of sputum for tubercle bacilli. It is our opinion, however, that the test will prove of great value as an aid to diagnosis in cases showing suggestive physical signs but in which it is impossible to demonstrate the presence of tubercle bacilli in the sputum.

In such cases positive complement fixation reactions would be strong evidence of the disease. A single negative would be inconclusive, but several negatives would indicate that no active tuberculous process was present.

It will also be useful to determine whether a case of tuberculosis clinically apparently arrested still has an active focus as indicated by a positive reaction.

CONJUGAL TABES DORSALIS *

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Tabes dorsalis, unfortunately often spoken of as locomotor ataxia, has received in comparatively recent times a vast amount of attention at the hands of the medical profession. Owing to the frequency with which it occurs, tabes takes the first place among spinal cord diseases. With the advent of laboratory methods, more or less specific as indexes of syphilitic conditions, interest was renewed in the study of this disease entity, and I feel that it may be safely stated that it is now held that syphilis plays the all important rôle as the true etiologic factor in the production of this disorder. Although Esmarch and Jessen as early as 1857 discussed the relationship between syphilis and paresis (and we have every reason to believe today that the cerebral manifestations of paresis and the cord manifestations of tabes are one and the same as far as etiology is concerned), it was not until the discovery of the exciting organism, the *Spirochaeta pallida*, by Schaudinn and Hoffmann, and later the perfection of the work of Wassermann, that the relationship, as prophesied by these early investigators, was fully established.

Krafft-Ebing has well said that "civilization and syphilization go hand in hand." Fortunately for the human family, however, not every person who becomes infected with syphilis is doomed to become a paretic or a tabetic. More and more the thought is being advanced today that perhaps it requires some special strain or change in the quality of the syphilitic organism to produce latent and destructive lesions of the central nervous system. In evidence of this, Brosius[1] points to the contamination of a number of glassblowers from the use of a mouthpiece which was the property of a fellow workman who had a syphilitic lesion about the mouth. Of those becoming thus infected, over 50 per cent. later developed either paresis or tabes. Other evidence is also on record in which men, worshiping at the shrine of Venus and such a contingency the regulatory-mechanism which I have just outlined is provided. But this mechanism may not act effectively, or the production of acids may be abnormal either in kind or in amount. Certainly, the most familiar example of acidosis arising from faulty or incomplete metabolism is that attended with the excretion of acetone and diacetic acid in the urine. In a typical case there is a fruity odor to the breath, and there are also hyperpnea, vomiting and prostration. On account of the chemical structure of the acid responsible for acetonuria, this type of acidosis is defined more specifically as a ketosis. In other cases of disturbed metabolism, acids which do not belong to the ketone series are formed. However, the specific nature of the toxic substance involved has not yet been recognized in every kind of acidosis; the classical instance of a proved specific causation is beta-oxybutyric acid in cases of diabetic coma.

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[4] Miller, H. R.: The Clinical Value of Complement Fixation in Tuberculosis, THE JOURNAL A. M. A., Nov. 18, 1916, pp. 1519-1521.

* Read before the Chicago Neurological Society, March 15, 1917.

[1] Brosius, cited by Dercum: Clinical Manual of Mental Diseases, p. 258.

In cases of vomiting and diarrhea during infancy and childhood, Howland and Marriott[1] demonstrated the presence of a true acidosis, employing methods now in general use for the recognition of this condition. Thus, in the acidosis of infants, the carbon dioxid tension in the alveolar air is decreased; the hydrogen ion concentration of the blood is raised, and the excretion of ammonia through the urine is increased. All these phenomena are indicative of a shifting of the reaction of the blood and tissues in the direction of lessened alkalinity, and this may be offered as defining in general the modern conception of acidosis.

TABLE 1.—CARBON DIOXID COMBINING POWER OF THE BLOOD BEFORE AND AFTER OPERATION

No.	Description of Operation	Duration of Anesthesia—Ether	C.c. of CO_2 Bound by 100 c.c. Plasma		Difference	Reaction of Urine
			Before	After		
1	Dilation and curettage	20 minutes	55.9	45.2	10.7	Acid
2	Pelvic puncture	20 minutes	56.4	54.7	1.7	Acid
3	Dilation and curettage	25 minutes	51.6	43.8	7.8	Acid
4	Suspension, perineorrhaphy	50 minutes	47.2	33.2	14.0	Acid
5	Hysterectomy, perineorrhaphy	1 hr. 10 min.	45.0	34.4	10.6	Acid
6	Hysterectomy, perineorrhaphy	1 hr. 15 min.	45.0	38.2	6.8	Acid
7	Hysteromyomectomy	1 hr. 20 min.	56.9	34.2	22.7	Acid
8	Hysteromyomectomy	1 hr. 30 min.	58.2	53.0	5.2	Acid
9	Suspension, perineorrhaphy	1 hr. 35 min.	45.2	44.8	0.4	Acid
10	Hysterectomy, perineorrhaphy	2 hours	42.1	34.4	7.7	Acid

Long before clinical methods existed for the study of the alveolar carbon dioxid and for the analysis of the blood, it was supposed that anesthesia frequently induced an acidosis, for acetone was demonstrable in the urine of patients suffering from persistent postoperative vomiting. From Deaver's clinic, Bradner and Reimann[2] reported acetonuria in 61.7 per cent. of postoperative cases. Crile and his associates also emphasized the value of studying the respiration in these cases and recommended that this examination be made before an anesthetic is administered, in order to test the patient's "operative resistance." Employing Michaelis' gas-chain method, Crile[3] found an increase in the hydrogen ion concentration of the blood in postoperative cases, and by the method of Van Slyke demonstrated a diminution in the alkali reserve. These effects he ascribed to emotion, starvation, exhaustion, interference with respiration, hemorrhage and to the anesthetic itself. Similarly, Austin and Jonas[4] observed in six cases that the alkali reserve was less after operation than previously, a result which my observations confirm.

The method I employed was briefly as follows: A specimen of blood was obtained several hours before the operation and another directly after it ended. The blood was collected under liquid petrolatum in small centrifuge tubes containing a few crystals of potassium oxalate. It was centrifugalized immediately, and the plasma drawn off with a pipet. Usually, the analysis was completed at once; but if not, the specimen of plasma was kept on ice in a paraffin-lined tube.

The analysis followed the Van Slyke technic and was carried out with the apparatus he described. The plasma was first brought into equilibrium with alveolar air. This was done by blowing through a wash bottle filled with glass beads which removed the moisture; thence the air was conducted into a separating funnel containing the plasma for analysis. The composition of the air thus employed was frequently tested by a simple apparatus for the analysis of alveolar air and blood gas devised by Yandell Henderson, a description of which he will soon publish. It was found that the amount of carbon dioxid in the air used to saturate the plasma varied but slightly, namely, between 5.5 and 6 per cent.

After the plasma had been brought into equilibrium with alveolar air, it was introduced into the Van Slyke apparatus; there, after the addition of acid, the carbon dioxid was liberated by means of a vacuum and measured. The figures in the tables are so calculated as to give the volume of carbon dioxid (reduced to 0 C. and 760 mm.) which 100 c.c. of plasma are capable of binding at 20 C.

The significance of the carbon dioxid combining power of the plasma, it will be remembered, depends on the fact that in a general way the basic substances there perform two functions: first, they enter into combination with carbon dioxid, and second, they neutralize acids formed in the course of normal or perverted metabolism. If the latter are formed in amounts which require for neutralization an unusually large proportion of these basic substances in the blood, a smaller proportion remains available for combination with carbon dioxid. In this way the extent to which the plasma combines with carbon dioxid becomes a measure of the acid bodies in the blood. A low carbon dioxid combining power denotes a tendency toward an acidosis or the actual existence of one. In an average normal individual, 100 c.c. of plasma combines with

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[1] Howland and Marriott: A Discussion of Acidosis with Especial Reference to That Occurring in Diseases of Children, Bull. Johns Hopkins Hosp., 1916, **27**, 63-69.

[2] Bradner and Reimann: Observation upon the Elimination of Acetone and Diacetic Acid in Two Hundred and Fourteen Surgical Cases, Am. Jour. Med. Sc., 1915, **150**, 727.

[3] Crile: The Phenomenon of Acidosis and Its Dominating Influence in Surgery, Ann. Surg., 1915, **62**, 257; A Discussion of Certain Criteria of Acidosis and Their Clinical Application, Am. Med., 1916, **22**, 447.

[4] Austin and Jonas: Clinical Studies of Acidosis, Am. Jour. Med. Sc., 1917, **152**, 81.

65 c.c. of carbon dioxid (Van Slyke, Stillman and Cullen;[5] and Gettler and Baker[6]). "The great majority of observations were between 50 and 60 c.c., and no normal plasma showed a value below 55." Furthermore, experience indicates that a lower value than 30 c.c. must be reached before there is serious distress from the acidosis itself. Very low values are encountered in cases of diabetic and uremic coma.

In the majority of the cases in Table 1, the initial observation was below 55, and this fact indicates that either the preliminary preparations for operation, which include the withdrawal of food for from twelve to twenty-four hours, or, perhaps, some other feature of the patient's physical condition was responsible for a moderately subnormal capacity of the plasma to combine with carbon dioxid. Not unlikely, this in itself is a feature of practical moment, bearing on the "operative risk." However, that problem is not one with which we are immediately concerned. At first we wish to know what effect the administration of the anesthetic has on the alkali reserve of the blood. To measure this effect the carbon dioxid combining power of the plasma was estimated both before and after anesthesia. What was the result?

In every case there was a lower value at the conclusion of the operation than had been observed previously. The difference does not vary directly either with the duration of ether anesthesia or with the extent of the operation. Thus, with a simple dilation and curettage requiring twenty minutes, the drop is almost identical with that in the case of a panhysterectomy requiring two hours. Similarly, the alkali reserve may decrease notably when the patient loses relatively little blood, and on the other hand may not change greatly when conspicuous hemorrhage occurs. As none of these patients exhibited more than usual postoperative vomiting, it was not surprising that at the conclusion of the anesthesia the carbon dioxid combining power of the plasma was well above the danger limit in every case.

TABLE 2—CARBON DIOXID COMBINING POWER OF THE PLASMA IN DOGS UNDER ANESTHESIA

Anesthetic	C c. of CO_2 Bound by 100 C c of Plasma				
	Control	½ Hour	1 Hour	1½ Hours	2 Hours
Chloroform	51 06	28 5	37 1	26 7	. .
Ether, Dog 1	52 5	40 05	49 7	40 05	29 8 (Dead)
Ether, Dog 2	42 4	44 3	42 4	33 8	32 8

Aside from the fact that lower values obtained constantly at the conclusion of operation than before, these observations did not settle any of the questions we wished to have answered, and in particular they gave no definite information regarding the time when the drop in alkali reserve took place. Consequently, animal experimentation was required, and three dogs were studied.[7] A sample of blood for a control observation was aspirated from the femoral artery before general anesthesia was begun, the necessary incision having been made under novocain. Subsequently, samples were secured at intervals of half an hour. Chloroform was used in one case and ether in two. Of the latter animals, one died from the effects of the anesthetic at the end of two hours. The results of these experiments are given in Table 2.

PROTOCOLS

EXPERIMENT 1.—Feb. 9, 1917. Large, male mongrel dog. Weight, 59 pounds. Morphin, ½ grain, before observation began. Control specimen of blood taken. Anesthetic started at 2:30 p. m; 80 c c. of chloroform were administered during one and a half hours. Blood was obtained at half hour intervals from the femoral artery. Respiration stopped five times during the experiment, but started again promptly following the use of resuscitatory measures.

EXPERIMENT 2.—Feb. 16, 1917. Large, male coach dog. Weight, 56 pounds. Morphin, ½ grain, before observation began. Control specimen taken. Anesthetic started at 1:30 p. m.; 750 c.c. of ether were administered during two hours. Blood was obtained from the femoral artery except after death, when it was taken at once from the ventricle. The dog stopped breathing after two hours of anesthesia, the pulse ceasing simultaneously with respiration; the animal could not be revived. Necropsy revealed no anatomic lesions.

EXPERIMENT 3—March 4, 1917. Male black and white mongrel Weight, 43 pounds Morphin, ½ grain, before observation began. Control specimen of blood taken; 650 c c of ether were given during the two hours of anesthesia. Blood was obtained from the femoral artery.

These observations teach that a notable drop may occur in the carbon dioxid combining power of the plasma during the first half hour of the anesthesia. However, in one animal the readings were practically alike until an hour and half elapsed; then the readings were lower. Since the initial drop is succeeded by a rebound, it appears not unlikely that in this case (Ether, Dog 2) the low point was missed because it was reached before the expiration of the first half hour of anesthesia. With the continuation of anesthesia in dogs, after the rebound, a gradual lowering of the capacity of the plasma to combine with carbon dioxid occurs.

It is noteworthy that the initial depletion of the alkali reserve is more marked in the case of chloroform. Whether or not this phenomenon is intimately associated with the accidents not infrequently reported at the outset of chloroform narcosis is not answered, of course, by these experiments; but it is not without interest that we find evidence of a serious change in the blood reaction near the outset of chloroform anesthesia.

As the only variables in the experiments on dogs were the anesthetic employed and the duration of its administration, the results are conclusive in showing the influence of ether and chloroform toward decreasing the alkali reserve. And since similar results obtained in human beings receiving operative treatment of various kinds and in dogs, we may conclude that in the former the anesthetic was at least the chief factor in lowering the carbon dioxid combining power of the plasma.

Having verified previous observation to the effect that lower values obtain for the alkali reserve after operation than before, and having studied its fluctuations at suitable intervals during anesthesia, we were prepared to determine what influence on this phenomenon the administration of sodium bicarbonate would have. There have been, of course, not a few advocates of this prophylactic measure against the development of postoperative vomiting (Buckler,[8] Burnham,[9] Crile); but as far as I know there has been no attempt to test its efficiency by means of blood analysis.

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[5] Van Slyke, Stillman and Cullen: The Nature and Detection of Diabetic Acidosis, Proc Soc Exper Biol and Med, 1915, 12, 165

[6] Gettler and Baker: Chemical and Physical Analysis of Blood in Thirty Normal Cases, Jour Biol Chem, 1916, 25, 211

[7] I am indebted to Drs J M Flint and J. M Slemons for the opportunity to make these observations in connection with their own study of anesthesia now in progress

That sodium bicarbonate will actually increase the capacity of the plasma for combining with carbon dioxid is a well known fact which I have had opportunity to verify. Thus, in a case of obscure toxemia of pregnancy, at the ninth month, associated with persistent vomiting and a marked acidosis the carbon dioxid combining power of the plasma was increased from 26.4 to 62.2 volume per cent.; and in another case,[10] probably of Weil's disease, it was increased from 20.6 to 80.6 volume per cent. following the administration of sodium bicarbonate.

TABLE 3.—ALKALI RESERVE OF THE BLOOD BEFORE AND AFTER OPERATION (WHEN SODIUM BICARBONATE WAS ADMINISTERED PRELIMINARILY)

No.	Description of Operation	Duration of Anesthesia	C.c. of CO_2 Bound by 100 c.c. Plasma		Difference	Reaction of Urine
			Before	After		
1	Dilation and curettage	25 minutes	52.0	38.6	13.4	Alk.
2	Laparotomy, drainage absc.	35 minutes	58.9	55.1	3.8	Acid
3	Oophorectomy	45 minutes	49.8	46.3	3.5	Neut.
4	Suspension	55 minutes	47.2	49.1	—1.9	Alk.
5	Version and extraction	1 hour	57.0	47.2	9.8	Acid
6	Hysteromyomectomy	1 hour 20 min.	56.8	50.1	6.7	Alk.
7	Wertheim suspension	1 hour 40 min.	59.5	57.4	2.1	Acid
8	Repair of complete tear	1 hour 45 min.	56.7	57.7	—1.0	Alk.
9	Operation for prolapse	2 hours 20 min.	47.9	39.3	8.6	Alk.
10	Suspension, perineorrhaphy	2 hours 30 min.	61.9	49.1	12.8	Alk.

The treatment adopted in the second group of cases studied before and after operation consisted in the administration of 15 gm. of sodium bicarbonate during a period of thirty-six hours preceding anesthesia. Occasionally this dosage was not sufficient to render the urine alkaline and, therefore, 30 gm. were given.

The first result of this treatment was to cause a moderate increase in the alkali reserve, though frequently even this precaution failed to lead to values before operation as great as Van Slyke considers the lower normal limit. More impressive is the fact that the ultimate depletion was less marked in the patients taking sodium bicarbonate preliminarily. In some cases there was practically no difference between the analysis made before and after operation; the average difference when sodium bicarbonate was given was about half that observed when it was not given. But, generally, anesthesia caused the same type of change previously observed, though it was much less marked. This fact appears in the strongest light, if the contrast is made in another way. Thus, in these two groups of cases, the one treated preliminarily with sodium bicarbonate, the other not, the former left the operating room with about the same alkali reserve with which the latter group entered it.

TABLE 4.—AVERAGES OF OBSERVATIONS BEFORE AND AFTER ANESTHESIA

	C.c. of CO_2 Bound by 100 C.c. Plasma		Difference	Number of Cases
	Before	After		
Without bicarbonate	50.7	41.7	9.0	10
With bicarbonate	54.7	49.0	5.7	10

Very little, if any, clinical difference was noted in the postoperative condition of the patients in the two groups. However, there was no opportunity to study a case presenting a seriously low alkali reserve before operation, a situation, naturally, which would offer the severest test of this therapy. The average surgical case, obviously, does not require the administration of sodium bicarbonate before operation, but whether or not it should be given may be determined only by some test which will indicate the extent of his alkali reserve. Therefore, the routine estimation of this factor of safety is desirable. The rate of respiration should be observed, and Yandell Henderson's[11] simple test for acidosis employed — the ability to hold the breath for the normal period of forty seconds. *If there is a suspicion that the alkali reserve is not what it should be*, one of the clinical methods for estimating it should be employed. Probably, the simplest and most widely applicable of these is the determination of the percentage of carbon dioxid in the alveolar air by Henderson's technic, or the determination of the alkali reserve of the blood by the Van Slyke or the Henderson apparatus. When either test indicates the need for additional alkali, sodium bicarbonate should be given until the urine becomes alkaline or neutral; and after operation its administration either by mouth or by rectum should be continued.

CONCLUSIONS

1. The capacity of the plasma for combining with carbon dioxid is decreased after ether and chloroform anesthesia; in other words, one influence of the anesthetic is toward depletion of the alkali reserve.
2. During the first half hour of anesthesia, this factor of safety is notably modified, and the drop is more profound in the case of chloroform than of ether.
3. The initial drop in the alkali reserve is followed by a rebound: from that level there is a gradual decrease until the conclusion of anesthesia.
4. Preliminary administration of sodium bicarbonate increases the alkali reserve, though the most *noteworthy effect* of this treatment is to lead to higher values for this factor of safety at the conclusion of the anesthetic.
5. The administration of this drug before operation is a rational precautionary measure against postoperative vomiting.

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[8] Buckler: Prophylaxis of Postanesthetic Vomiting; Am. Jour. Surg., 1914, **28**, Q. Suppl. Anesth., 13.

[9] Burnham: The Administration of Glucose Solutions as a Prophylactic Against Postoperative Shock, Am. Jour. Med. Sc., 1915, **150**, 431.

[10] Through the courtesy of Dr. Wilder Tileston.

[11] Henderson, Yandell: The Time That the Breath Can Be Held as an Index for Acidosis, The Journal A. M. A., July 25, 1914, p. 318.

GASTRIC AND DUODENAL INFUSION BY MEANS OF THE DUODENAL TUBE

A NEW PROCEDURE IN POSTOPERATIVE TREATMENT *

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MINNEAPOLIS

The duodenum was first utilized for infusion in a group of dangerous biliary infections by McArthur.[1] Maury[2] used a duodenostomy opening for this purpose in the experimental laboratory. Since Matas[3] found it impossible, in some cases of cystic or of common duct obstruction, to instil fluids into the duodenum by the simple drip method through the biliary fistula, he passed a fine catheter through the biliary tract into the duodenum. It occurred to me that the passage of a catheter by mouth into the duodenum would be preferable to the biliary route, since it could be used in other than biliary fistula cases and would be more certain than the drip into the biliary drain. To the technic of a gastro-enterostomy or a stomach resection, McArthur[4] has recently advocated adding the performance of a temporary biliary fistula made in the normal gallbladder.

The use of the biliary route to the duodenum in cases in which a fistula would ordinarily be made, for the treatment of some pathologic condition of that tract, would not increase the dangers of infection, of permanent fistula, or of shock from prolonging the operation; but a biliary fistula made for the purpose of duodenal infusion, in addition to some other operation, would decidedly increase those dangers, and would have a marked disadvantage over a method as simple in performance as the passage of a duodenal tube by mouth.

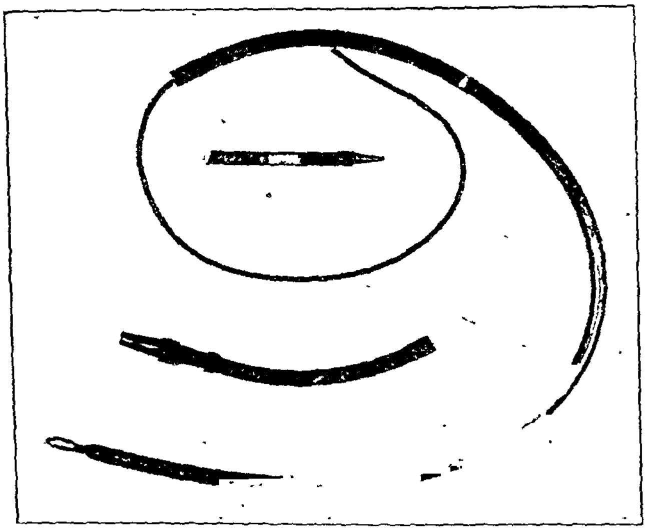

Fig. 1.—Duodenal tube placed inside of stomach tube to facilitate passage into stomach.

A review of the literature has convinced me that the use of the duodenal tube for infusion, in postoperative treatment, is a new procedure. Hemmeter[5] and Kuhns[6] were the first to construct tubes that passed the pylorus successfully. Since these tubes were somewhat bulky and complicated in construction, they did not come into general use. In 1910, Einhorn[7] and Gross[8] each constructed a small flexible rubber tube with a metal tip which has been successful for passage into the duodenum, and even into the jejunum. More recently Palefski[9] showed a smaller and heavier tip to be of advantage, while Hess[10] and others have employed an ordinary small catheter in infants. For use in stomach lavage, Kanavel[11] has added a wire carrier to aid the passage of this type of tube.

The duodenal tube up to this time has been used for diagnosis and for therapy in medical cases. It has been used to collect material in disease of the duodenum, the pancreas and the biliary tract, to determine the degree of hemolysis, and to obtain cultures for typhoid.[12] Gross[13] used direct lavage of the duodenum in chronic catarrh, in persistent jaundice and in gallstone colic, with good results. Skaller[14] used various medications applied directly to the duodenum. Einhorn[15] and others early used the tube for duodenal feeding in gastric and duodenal ulcer. Medical men have found feeding and medication through the tube to be of value in persistent vomiting, due to pregnancy, nervousness, stenosis and pylorospasm (in infants, Hess[10]); in stomach disease, due to ulcer, atony, chronic dilatation, and ptosis; and in cachectic conditions, due to pernicious anemia, tuberculosis and chronic fevers. Einhorn[16] states that in cirrhosis of

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* From the Department of Surgery, University of Minnesota Medical School.

[1] McArthur, L. L.: Some Therapeutic Possibilities of Biliary Fistulas, The Journal A. M. A., Jan. 1, 1910, p. 1.

[2] Maury, J. D.: Discussion, McArthur (Footnote 1).

[3] Matas, R.: The Gall Bladder and Biliary Tract an Available Therapeutic Route to the Upper Bowel, Tr. South. Surg. and Gynec. Assn., 1911, **23**, 490.

[4] McArthur, L. L.: The Value of a Temporary Cholecystostomy in Gastric Surgery, Journal-Lancet, 1916, **36**, No. 24.

[5] Hemmeter: Arch. f. Verdauungskr., *1896*, **2** (quoted by Bondi).

[6] Kuhns: Arch. f. Verdauungskr., **3** (quoted by Bondi).

[7] Einhorn, M.: A Practical Method of Obtaining the Duodenal Contents in Man, Med. Rec., New York, *1910*, **77**, 98.

[8] Gross, M.: A Duodenal Tube, New York Med. Jour., 1910, **91**, 77; Eine Duodenalröhre, München, med. Wchnschr., 1910, **57**, 1177.

[9] Palefski: New and Improved Duodenal Instruments and Technic of Speedy Intubation of the Normal Duodenum, New York Med. Jour., 1913, **98**, 751.

[10] Hess, A.: The Use of a Simple Duodenal Catheter in the Diagnosis and Treatment of Certain Cases of Vomiting in Infants, Am. Jour. Dis. Child., March, 1912, p. 133.

[11] Kanavel, A. B.: Continual Stomach Lavage and Continuous Hypodermoclysis in Peritonitis, Persistent Vomiting with Dehydration and Dilated Stomach, Surg. Gynec. and Obst., October, 1916, p. 483.

[12] These uses of the duodenal tube have been discussed by:
- Hess, A.: A Method of Obtaining Cultures from the Duodenum of Infants: Collected Studies from the Bureau of Laboratories Dept. of Health, City of New York, 1912-1913, **7**, 54.
- Holzknecht and Lippman: Vereinfachung der klinischen Duodenalschlauchuntersuchung, München. med. Wchnschr., 1914, **61**. 1993.
- Gross, M., 1912: Kurze Erwagungen über die grob-physikalischen Eigenschaften des Menschlichen Duodenal (jejunal) Saftes, Wien. klin. Wchnschr., *1912*, **25**, 1527.
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- Einhorn, Max: Experiences with the Duodenal Contents, The Journal A. M. A., July 2, 1910, p. 6; Erfahrungen mit der duodenalernährung, Berl. klin. Wchnschr., 1912, **49**, 1419; Direct Exam*ination of the Duodenal* Contents (also Bile) as an Aid in the Diagnosis of Gall-Bladder and Pancreatic Affections, Am. Jour. Med. Sc., 1914, **148**, 490.
- Bondi: Die selbsttätige Drainage des Magens und Duodenums und ihre Anwendung für die klinische Diagnose, Arch. f. Verdauungskr., 1913, **19**, 692.
- Bondi and Salomon: Med. Klin., 1913, No. 22, p. 886.
- Crohn, B. B.: Diagnosis of Functional Activity of Pancreas by Means of Ferment Analyses of Duodenal Contents and Stool, Am. Jour. Med. Sc., 1913, **145**, 393; The Chemical Examination of Duodenal Contents as a Means *of* Diagnosis in Conditions of Jaundice, The Journal A. M. A., Feb. 13, 1915, p. 565.
- McNeil: The Use of the Duodenal Catheter in Diagnosis, Am. Jour. Med. Sc., 1916, **151**, 106.

[13] Gross, M.: Die Duodenalröhre und ihre Anwendung, Berl. klin. Wchnschr, 1911, No. 29, p. 1320.

[14] Skaller: Die Behandlung des Dünndarms mit gas formigen und vernehelten Medikamenten, Berlin Klin. Wchnschr., 1912, No. 35, p. 1662; Zür Technik meiner Behandlungsmethode des Dünndarms mit vernehelten Medikamenten, ibid., 1912, No. 45, p. 131.

[15] Einhorn, Max: Duodenal Alimentation, Med. Rec., New York, 1910, **78**, 93.

[16] Einhorn, Max: Beneficial Effects of Duodenal Alimentation in Cirrhosis of the Liver, Med. Rec., New York, 1913, **84**, 154.

the liver duodenal alimentation contributes greatly toward diminution of the functional work of the liver.

The drip method of duodenal infusion was first described by McArthur[4] through the use of a drainage opening in the biliary tract. Between feedings in cases of ulcer and persistent vomiting, Einhorn[15] gave water by the drip method through the duodenal tube. Lazarus[17] has given fluids in this manner for nourishment in ulcer cases, cachectic conditions, and in some cases preparatory to stomach operations. He has used the tube a few times after operations on the stomach, but only for the purpose of preventing postanesthetic vomiting. In feeding cases, the injection into the duodenum of even moderate quantities of fluid at times causes distress, and emphasizes the importance of the drip method (Morgan,[18] Jones[19]).

Einhorn and Rosenbloom[20] have demonstrated the efficiency of the duodenal route as regards absorption. They determined that there was a maintenance of the nitrogen equilibrium in patients fed by the tube over long periods of time. Gross and Held[21] state that water and salts are readily absorbed in the duodenum, and that, of the carbohydrates, the monosaccharids are readily absorbed in solutions of 6 to 8 per cent., glucose and galactose being more quickly absorbed than levulose and mannose. (Lactose may cause diarrhea.)

The duodenal tube may be passed before operation, to improve the patient's condition more readily, or during or after operation. The tube is of value as soon as it is in the stomach, since the stomach may first be washed to prevent postanesthetic vomiting; the slow infusion avoids irritation due to swallowing, and it may also be used for gavage, in persistent vomiting. In addition, the passage of the tube through the pylorus may relax it as it does in persistent vomiting due to pylorospasm (Hess[10]).

That the pylorus is patent soon after operations on the intestine I have been able to demonstrate (on animals) by means of bismuth, showing that there may be no measurable delay except in extensive trauma, when there may be a delay of about an hour. Immediately after a gastro-enterostomy, however, when the pylorus was spastic, bismuth passed the union into the jejunum without delay (McWhorter[22]).

The small, soft tube may be passed into the stomach or duodenum at the time of operation (Fig. 1). The introduction into the stomach may be effected by first passing the tube inside of a stomach tube and passing it, then withdrawing the latter. I have been able (in the experimental laboratory) to manipulate the metal tip through the pylorus into the duodenum from outside the stomach wall. In one experiment, using a small soft tube without a metal tip, I made a small incision in the stomach wall and pushed the end of the tube into the duodenum by means of forceps. This could easily be done at the time of a stomach resection, or in a gastro-enterostomy when the tube could be placed in the jejunum. The usual container and drip apparatus are connected to the tube, into which any desired solutions may be placed (Fig. 2). The tube may be disconnected at any time for the purpose of lavage or of aspirating, to determine the absorption. McArthur[4] says that the Murphy drip or Kanavel's continuous hypodermoclysis does not accomplish the same results, since in hypodermoclysis the change in the splanchnic circulation is only secondarily affected, and in colonic instillation the improvement in the portal circulation is not so marked as when the same fluid bathes the jejunal lining.

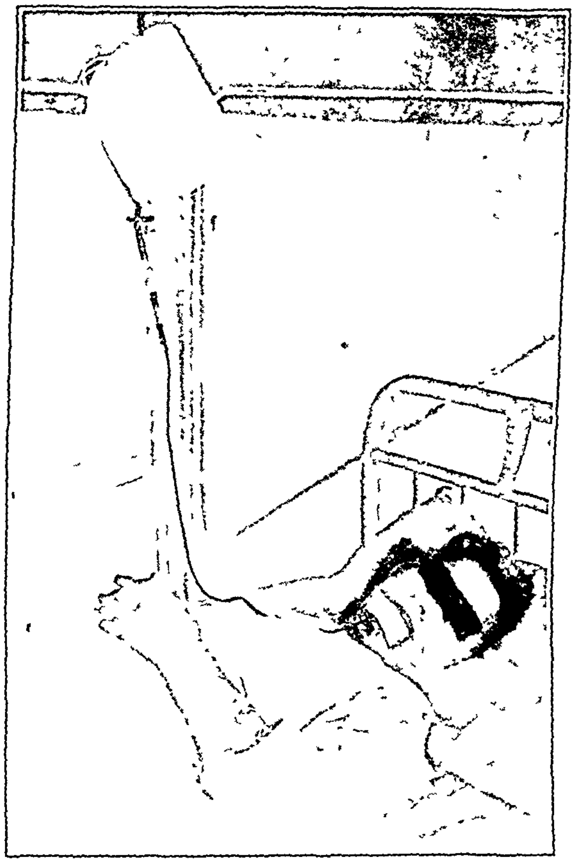

Fig 2.—Drip apparatus in action

REPORT OF CASES

Case 1.—D. E. M., aged 52, on whom a resection of the stomach had been performed, with a posterior gastrojejunostomy for carcinoma, received the rectal drip but had difficulty in retention. The patient vomited small amounts repeatedly for three days following the operation, totaling 450, 650 and 450 c.c. daily. At the beginning of the fourth day I passed a tube by mouth. Following this, the stomach was washed and the drip started. The vomiting stopped immediately. The patient received 2,450 c.c. of sterile 6 per cent. glucose solution the following twenty-four hours. Then, after consultation with Dr. Leonard G. Rowntree, more nourishment was added in the form of 1 ounce of cream and the albumin of one egg, twice a day, and the solution was made up with 0.4 per cent. salt solution and 6 per cent. glucose with 4 gm. of sodium bicarbonate daily. The patient absorbed 1,880 c.c. the next twenty-four hours, as it seemed better to restrict the amount of liquid, and 1,550 c.c. the third. During the drip, we aspirated every two hours but could not obtain more than a few cubic centimeters at any time. At this time the patient's condition seemed so much improved that the tube was withdrawn.

Case 2.—Mrs. M., with an acute attack of appendicitis, had vomited three or four times daily for a week. The first twenty-four hours after operation she absorbed 1,200 c.c. of fluids through the tube, and voided 500 c.c. of urine; in the second twenty-four hours she received 1,200 c.c, and voided 1,050 c.c., when the drip was discontinued because the condition was good.

In an animal experiment for another purpose, resulting in a general suppurative peritonitis following a perforation of the cecum, I inserted the tube into the duodenum. The dog (weighing 20 pounds) absorbed 1,200 c.c. of physiologic sodium chlorid solution with epinephrin the first seven hours

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17. Lazarus, P.: Dauernahrung mittels der Duodenalsonde, Berl. klin. Wchnschr., 1913, **50**, 1391.

18. Morgan: Duodenal Alimentations, Am. Jour. Med. Sc., 1914, **148**, 360.

19. Jones, C. M.: Duodenal Feeding, Surg. Gynec. and Obst., February, 1916, p. 236

20. Einhorn and Rosenbloom A Study of the Nitrogen Metabolism in Three Cases of Duodenal Alimentation, Am. Jour. Med. Sc., 1911, **142**, 7.

21. Gross, M. H., and Held, I W : Duodenal Alimentation, The Journal A. M. A., Aug. 7, 1915, p 520

22. McWhorter, G. L.: A New Method of Intestinal Anastomosis, with a Study of the Intestinal Movements After Its Use, The Journal A. M. A., Jan. 8, 1916, p. 8

ADVANTAGE OF THE METHOD

Infusion through the permanent tube by mouth is desirable in the treatment of postoperative cases, with early nourishment and medication, since it may be instituted at any time without adding to the dangers of operation. In dehydration, acidosis, ileus and especially in the persistent vomiting following gastro-intestinal operations, this method has proved of definite value.

RECONSTRUCTION OF THE PYLORUS AND PYLORIC ANTRUM

BY TWO SUPERIMPOSED FASCIAL TRANSPLANTS AFTER EXCISION OF PYLORIC ULCER *

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CHICAGO

The surgical treatment of gastric and duodenal ulcer has changed very little in the last thirty years. Early in that era a number of men performed both anterior and posterior gastro-enterostomy, and this has been the popular and usual operation for all forms of gastric and duodenal ulcers. When this operation was first employed, surgeons performed it because they believed it produced drainage from the stomach to such an extent that all the food would go through this opening and none through its normal pyloric opening. Since that time many advances have been made in the knowledge of the physiology of the stomach and also the pathology of this condition through fluoroscopic and Roentgen-ray examinations. In all these studies it has been proved that the stomach with a gastro-enterostomy functionates in an entirely different manner from that for which the original operation was performed. In spite of this fact, little has been done in the line of surgery to change the surgery of the stomach in accordance with the new scientific and physiologic facts which have been demonstrated. The result is that gastro-enterostomy alone seems to be the popular operation today, and the only changes which have been made relate to its location and a few fine technical details as to suture material and type of stitch used. In simple gastro-enterostomy without pylorectomy and closure, the Roentgen ray has shown that at least 25 per cent. of food and secretion passes by the old route, thus invalidating the purpose of the operation.

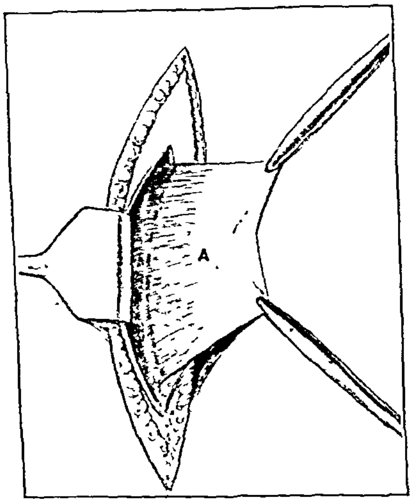

Fig 1.—Transplant 2: *A*, transplant consisting of peritoneum, and transversalis fascia and muscle

About seventeen years ago, various surgeons added to this operation the closing off of the ulcer distal to the gastro-enterostomy by what is known as a pyloric closure. The majority of the methods have not proved successful, because they were only temporary closures and for this reason did not give the desired results.

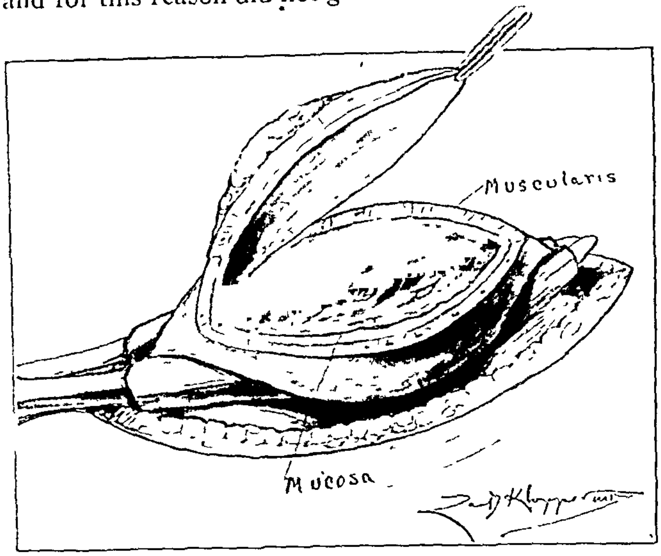

Fig. 2.—First method: application of stomach clamp and excision of ulcer.

In 1914[1] I demonstrated a method of pyloric closure by using a submucous fascial transplant, which has proved experimentally and clinically to be absolutely permanent. I believe the permanent closure is a decided step forward, because it produces in the region of the ulcer all of those conditions which tend to cure an ulcer, namely:

1. By shutting off the gastric secretions and food from the stomach and duodenum, in which these ulcers occur, all irritation is arrested.

2. By using the submucous fascial transplants, a paresis is produced in the pylorus and duodenum from the point of closure around to the gastro-enterostomy, which places the ulcer at absolute rest.

I have been much impressed by the statement of medical men and surgeons that the patients who have their ulcers excised do best and have fewer symptoms following operation, while those who have a gastro-enterostomy, with or without pyloric closure, have a more protracted course of symptoms after operation. The only reason that ulcers in the pyloric region are not excised so frequently as those in the body of the

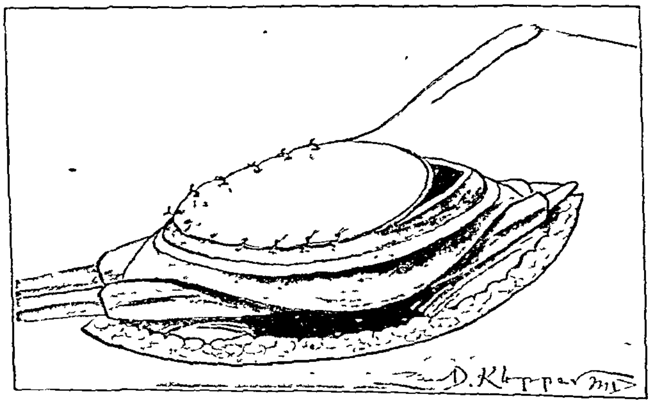

Fig 3.—First method: suturing Transplant 2 to mucosa.

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* From the Morris Institute of Medical Research of the Michael Reese Hospital.

[1] Strauss, A. A.: New Methods of Pyloroplasty for Congenital Pyloric Stenosis, The Journal A. M. A., Oct. 30, 1915, p. 1533.

stomach, especially those on the lesser curvature, is that they are much more difficult to excise, and when excision is attempted, it produces so much mutilation that it is necessary to remove the entire pyloric segment. A number of men abroad and in this country, especially Rodman and Deaver, have carried out the principle of always excising the ulcer by doing a pylorectomy and then performing a gastro-enterostomy. The principle of excising the ulcer is correct, but to excise the ulcer and with it take the most important part of the stomach, as they do in the pylorectomy, I believe is wrong.

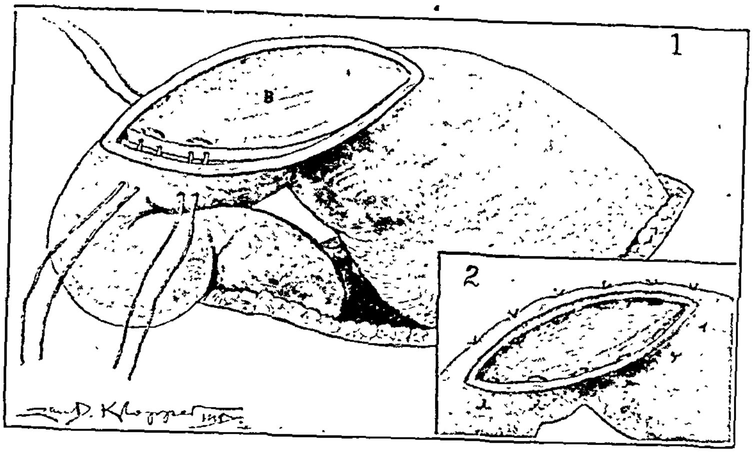

Fig. 4.—First method: Suturing Transplant 1 to muscularis.

The ideal object of any surgical procedure should be to do away with the pathologic conditions and leave the organ in as nearly normal an anatomic condition and physiologic relationship as possible. In doing a pylorectomy some men leave only the body of the stomach, whose functions we know to be entirely different from that of the pylorus. The fact, that the patient lives in spite of this, does not prove the operation to be justifiable.

We know that the body and the fundus of the stomach during the process of digestion are in a state of tonic contraction, forcing the food in small portions into the pyloric antrum or vestibule. If that portion is cut off, as it is in pylorectomy or in von Eiselberg's exclusion method, the tonic contractions of the body and fundus on the gastro-enterostomy placed in that locality cause the stomach to empty within from twenty to thirty minutes. This certainly must be an abnormal condition, for the function of the stomach is to retain the food from six to eight hours and have it undergo certain forms of digestion, being passed into the intestine in small bits and not jammed through an enterostomy opening within twenty or thirty minutes without being properly digested.

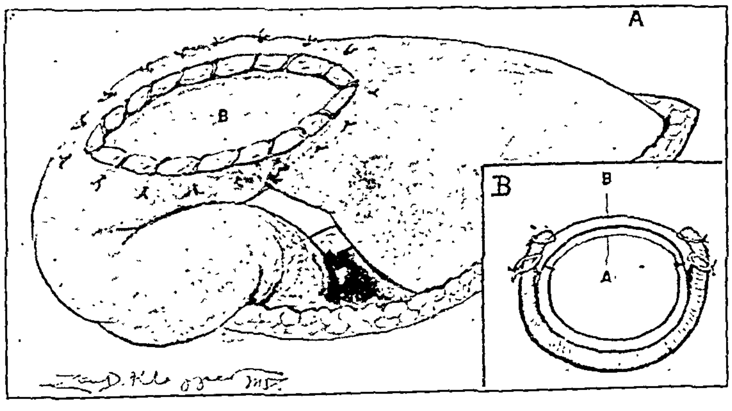

Fig. 5.—First method: *B,* fascial transplant attached to muscularis; *A,* transplant composed of peritoneum, transversalis muscle and fascia attached to mucosa.

Mayo, Kuttner, Hartmann and Payr have practiced excision on ulcers of the lesser curvature and found that the stomach did not empty itself properly, owing to spasm or improper action of the muscle tendon of the lesser curvature, and for this reason in several instances they either had to perform a gastro-enterostomy at a second operation, or remove in the first operation the entire segment in which the ulcer occurred.

It will be noted from the experience of all these surgeons that excision of the ulcer would be the most logical procedure if it did not require too much additional surgery and mutilation of the stomach. This is especially true when we consider the problem of the relationship of ulcer to cancer and the work of Rosenow, who has demonstrated that the ulcers of the stomach are lesions produced by a streptococcus infection similar to lesions in the inflamed gallbladder and inflamed appendix. If this is true, then there can be no valid reason why an ulcer of the stomach should not be treated the same as the chronically inflamed gallbladder or inflamed appendix, namely, by excision.

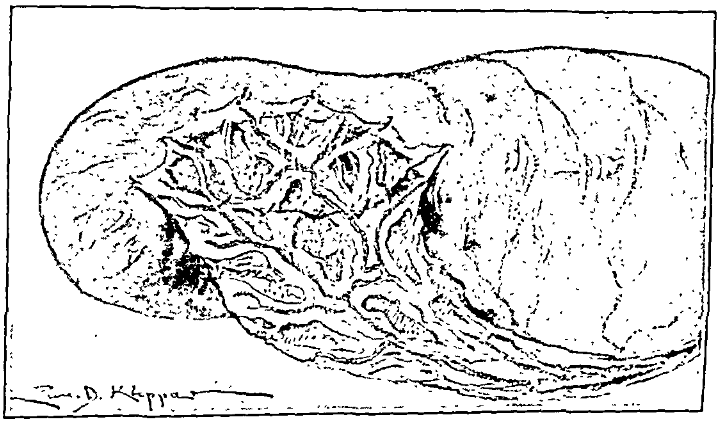

Fig. 6.—First method: free edge of attached omentum covering area of operation.

In 1912, while working on the problem of reconstruction of the ureter from internal portions of the abdominal wall consisting of fascial transplants, I noticed that the interposition of this fascial tube between the cut ends of the ureter interrupted the peristaltic waves. In the same way, one year later, by using a submucous fascial transplant to close off the pylorus, I noticed a paresis of the bowel from the point of closure around to the gastro-enterostomy. I then conceived the idea that by taking advantage of the foregoing fact and excising the ulcers of the lesser curvature and pyloric region, reconstructing that portion by fascial transplants, we would have a normally functionating stomach without pylorospasm. None of the additional surgical procedures, therefore, such as resection of the portion of the stomach in which the ulcer occurred, pylorectomy or gastro-enterostomy, would be necessary. Hence I wish to present the two following procedures:

FIRST METHOD

A right rectus incision was made one-half inch to the right of the midline, extending from the angle of the ribs down to the umbilicus. The anterior sheath of the rectus was exposed and an oval flap about 1 to 1½ inches in length and about 1 to 1½ inches in width secured. In resecting this a thin, adherent layer of muscle fibers from the rectus muscles was taken with it. The rest of the abdominal wall was then divided and the peritoneum opened. The forceps were placed on the inner portion of the divided abdominal wall and the peritoneum with its transversalis fascia and muscle was pulled upward (Fig. 1) and divided at the dotted line which forms Transplant 2.

The stomach was next brought into view. The pyloric portion in which the ulcer occurs was tightly grasped between the thumb and index finger and an elliptic incision was made around the ulcer through the muscularis down to the mucosa. The mucosa was separated from the muscularis beyond the surrounding infiltrated area of the ulcer. A stomach clamp was then applied and the ulcer with its surrounding infiltrated area was cut away (Fig. 2).

Transplant 2, which is composed of peritoneum transversalis fascia and muscle, was now sutured by an end to end suture with fine chromic catgut to the mucosa, the peritoneum corresponding to the mucosa (Fig. 3). The first transplant, which is composed of the anterior sheath of the rectus and some muscle fibers, was now placed and sutured to the muscularis with interrupted silk sutures similar to the Andrews imbrication method, the sutures being placed through the edges of the transplant in such a manner that the transplant was between the mucosa and the muscularis with the muscularis overlapping it (Fig. 4, 1 and 2).

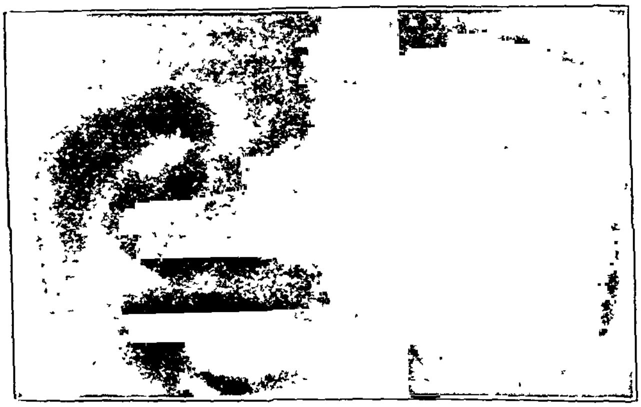

Fig. 7.—Roentgenogram showing perfect action of pyloric antrum and pylorus fourteen months after operation.

A second suture, which, however, was not absolutely necessary, was placed around the inner edge of this transplant and muscularis (Fig. 5, *A* and *B*). The free edge of the attached omentum was now sutured over this entire area with a few interrupted catgut sutures (Fig. 6). This part of the procedure I believe to be very important for, as I have previously shown, the omentum not only acts as a means of preventing hemorrhage, leakage and adhesions, but it also does something far more important: it vitalizes the fascial transplant. This it will do not only in a clean field but also in an infected field. I know of no other organ or part of an organ in the body, with the exception of the heart muscle, on which a greater amount of work is placed than the pyloric region of the stomach. These fascial transplants not only are subjected to the acid secretions and food particles from the stomach, but also have to withstand the intrapyloric pressure and the tremendous peristaltic contractions which occur at the pyloric end of the stomach during digestion.

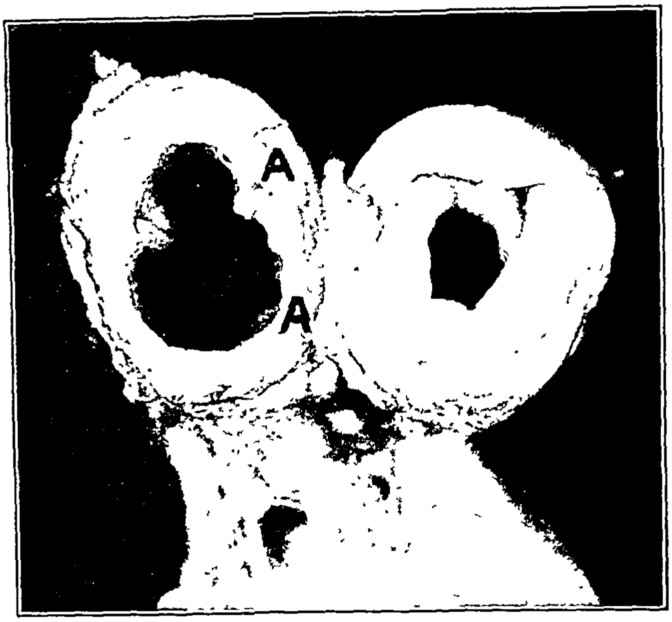

Fig. 8.—Cross section of reconstructed pyloric region at end of twelve months.

I believe that these transplants constantly hold without leakage because the blood vessels and lymph of the attached omentum become adherent immediately to these fascial transplants, nourish them, and also produce a collateral circulation in the surrounding area of the infiltrated stomach wall, and I believe that this is the most important function of the attached omentum in this procedure.

Thirty-four animals were operated on in the last three years by this method, of which four died within from six to eight days following the operation. Necropsy revealed a peritonitis which, however, was not due to any leakage from the area of operation. All of the thirty animals that lived made uneventful recoveries and acted, shortly after the operation, like normal animals. They gained in weight and appeared in good health.

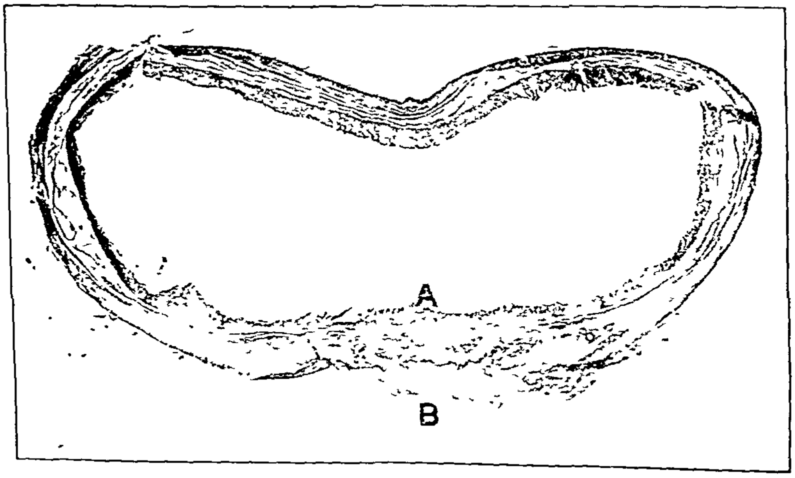

Fig. 9.—Photomicrograph of transverse section of reconstructed pylorus; *A*, mucosa; *B*, transplant. At end of twelve months.

Practically all the animals were subjected to roentgenoscopy from time to time, and to fluoroscopy at various intervals from six weeks to one year. All of them showed a normally functionating pylorus (Fig. 7). The pyloric action and cap were so perfect that several Roentgen experts could not distinguish under the fluoroscope the animals which had been operated on from normal animals.

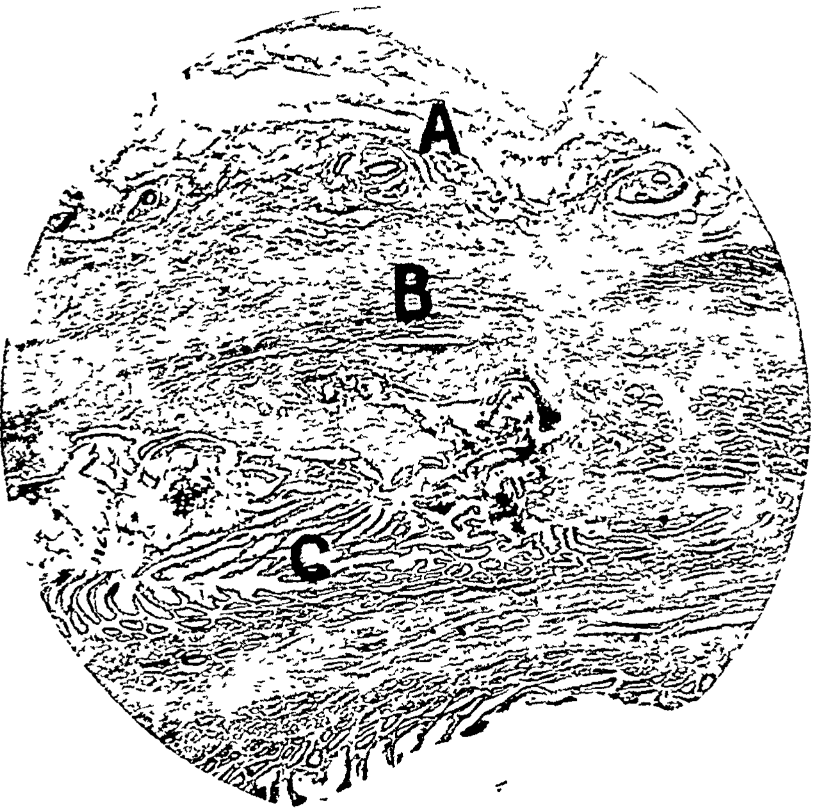

Fig 10.—High power photomicrograph taken at junction of transplant and stomach: *A*, omental vessels from great omentum, *B*, transplant, *C*, healed in mucosa. At end of twelve months

The first ten animals operated on were killed six months after operation. The second ten were killed nine months after operation, and of the next series of ten, five were killed at the end of eleven months, three at the end of twelve months, and two at the end of fourteen months. All of the animals showed practically the same condition.

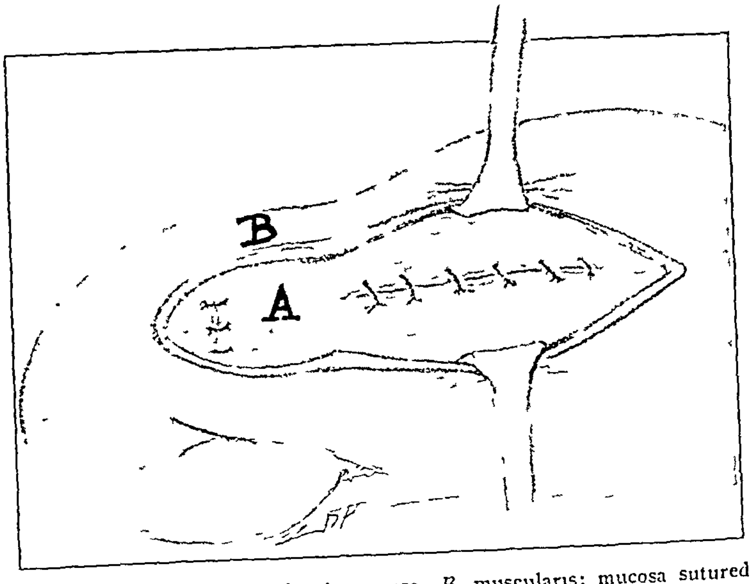

Fig 11.—Second method *A*, mucosa, *B*, muscularis; mucosa sutured after excision.

When the abdomen was opened, the stomach was found perfectly free; the great omentum covered the area of operation and appeared perfectly organized with the fascial transplants. The stomach was now distended under the hydrant, both from the duodenal and the esophageal end, and shown to be perfectly patent and normal in size.

Cross section (Fig. 8) revealed a perfectly patent pylorus. Microscopically (Fig. 9) a transfer section through the pyloric region revealed that both fascial transplants had healed perfectly, that the omental vessels were attached to the transplant, no scar tissue could be noticed, there were no areas of degeneration present, and the mucosa of the stomach had healed over the peritoneal surface of the inner transplant (Figs. 9 and 10).

SECOND METHOD

Within the last year I have simplified this technic by performing a plastic operation on the mucosa and using only one transplant, thus:

The incision around the ulcer down to the mucosa was made as in the first method, with the exception that the incision was carried back on the body of the stomach for a distance of 2 inches and this mucosa thoroughly freed from the muscularis around one half of the circumference of that portion of the stomach. The ulcer was then cut away as in the former procedure.

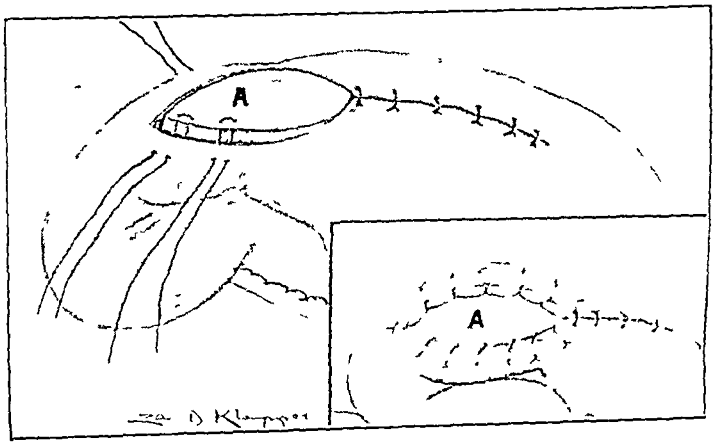

Fig 12.—Second method insertion of fascial transplant; *A*, transplant.

A transverse incision was made in the mucosa and sutured longitudinally, which allowed the mucosa to come forward where the ulcer was cut away, so that it could be easily sutured transversely (Fig. 11). The fascial transplant was then set in (Fig. 12), and covered by omentum as in the former procedure (Fig. 13). The same procedure has been carried out on the duodenum with equal success.

COMMENT

Clinically these animals do as well as those operated on by the first method, and the procedure is much more simple than the first one. The second method, however, has not been tried out as thoroughly and for as long a time as the first one.

The problem was as to whether this procedure would be feasible on a stomach which had undergone the pathologic changes produced by an ulcer. In an effort to determine this point, Dr. Walter Hamburger and myself produced some chronic ulcers in the pyloric region according to the method described by Hamburger and Friedman, and within from six to twelve weeks these animals were reopened. We found all the pathologic conditions of large, indurated ulcers with many adhesions to the under surface of the liver and parietal wall.

The operative procedure mentioned above was carried out on these animals, and we found that it was just as easy and just as practicable as on the normal stomach. In making pyloric closures and simple gastro-enterostomies on animals in which we had produced ulcers, we found that the clinical course was much better when the ulcer was excised.

Of interest in connection with the question of vitalization of the fascial transplant by the free edge of the attached great omentum in an infected field are four cases in which operation was performed for perforating gastric ulcer and in which the ulcers were so large and indurated that purse-string sutures and inversion was out of the question.

In the first patient the edge of the ulcer was curetted, and two deep sutures were placed through the indurated area to bring the freshened edges together. A large fascial transplant from the anterior sheath of the rectus was sutured with interrupted silk stitches over the entire field, extending beyond the indurated area of the ulcer. The free edge of the attached omentum was now brought over this entire area and sutured over the transplant.

In the second patient the induration was so marked that the edges of the ulcer could not be brought together by suture, and the fascial transplant was simply sutured over the opening and covered by omentum. The other patients were operated on in the same manner. All four patients made uneventful recoveries and are at present in good health.

These cases illustrate the practicability of using the attached omentum to vitalize free fascial transplants in an infected field as well as in a clean field. The omentum not only vitalizes the fascial transplant but also produces a collateral circulation around the indurated areas and thereby promotes healing of the perforated ulcer.

CONCLUSIONS

1. Three years' experience with this method has proved it to be an absolutely safe procedure.

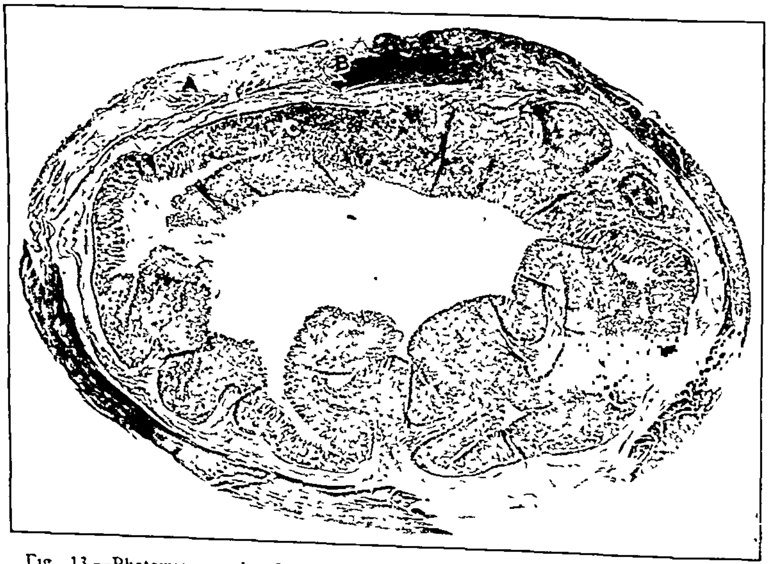

Fig. 13.—Photomicrograph of transverse section of pylorus where single transplant has been used: *A*, fascial transplant; *B*, fascial transplant united to muscularis; *C*, mucosa. At end of ten months.

2. In view of the relationship of ulcer to cancer, and the fact that it probably is a localized lesion produced by streptococcus infection, this method of excision seems far more rational than gastro-enterostomy with or without pyloric closure.

3. The operation leaves the stomach in its normal anatomic condition and physiologic relationship, and does not mutilate the organ or cut away any of its most important parts.

4. The operation takes far less surgical skill, produces much less shock, and takes less time than a simple gastro-enterostomy.

5. The vitalization of the free fascial transplants by the free edge of the great omentum, in both a clean and an infected field, has been proved both experimentally and clinically.

6. The closing over of a perforated ulcer by a free fascial transplant and the attached omentum is far safer and more permanent than a purse-string suture placed in the indurated area of an ulcer.[1]

30 North Michigan Avenue.

USEFULNESS OF SERUMS AND VACCINES UNDER WAR CONDITIONS

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The development of biologic products used for prophylactic and therapeutic purposes has been so extensive that confusion exists as to the value of some of the agents of this group, and a brief discussion of the subject at this time is warranted.

The brilliant results which followed the use of the first agents of this group, notably vaccine virus, antidiphtheric serum and antitetanic serum, have not been duplicated by the majority of those that have come into use in recent years.

In this country products of this class may not be imported, exported, or sold in interstate commerce without a license issued to the manufacturer by the secretary of the treasury, which license is based on a careful investigation of methods of the manufacture of the products and conditions surrounding it.

The license means in effect that products are produced under conditions which should insure freedom from dangerous contamination and, in cases in which a potency standard has been established, that the product is of the potency claimed. Such standards have been adopted for the antitoxins for diphtheria and tetanus; a tentative standard has also been established for antityphoid vaccine.

Products for which there are no potency standards range all the way from such trustworthy agents as vaccine virus and antirabic virus to those of such doubtful value as many of the bacterial vaccines and the large family of tuberculins.

Aside from licensed manufacturers, certain municipal and state health laboratories produce biologic products. These laboratories are supervised only by their own departments; this supervision may be effective or otherwise, depending on circumstances.

Before consideration of the individual agents that will be discussed, it may be pertinent to state that the available supply of biologic products, actual and potential, is fully equal to any conceivable requirements. Indeed, during the war, American manufacturers have furnished to foreign governments large quantities of tetanus antitoxin, the product most extensively used in active military operations. If our supplies of munitions of other sorts were relatively as abundant, our condition of preparedness would be all that could be desired.

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[1] This paper is the third report of investigations made in this laboratory on this subject. The preliminary report, "New Methods of Pyloroplasty," appeared in The Journal, Oct. 30, 1915, p. 1533. Reference should also be made to "Reconstruction of the Pylorus," Surg., Gynec. and Obst., Jan. 7, 1916, p. 496.

It seems scarcely necessary to point out that by far the largest field of usefulness for these agents is in the prophylaxis of infectious diseases, although there is an important field of usefulness for some in a curative way. Some are useful for diagnostic purposes exclusively; these will not be considered here.

AGENTS OF PROVED WORTH

VIRUS

Smallpox Vaccine.—The only points that need be mentioned here are the form of supplying the agent and the method of applying it. Vaccine virus is supplied (1) on points of celluloid, ivory, glass, or bone; (2) in glass capillary tubes for individual vaccination; and (3) in bulk for multiple vaccination. All of these forms have their advocates. The first is perhaps most generally used, the second the most generally recommended, and the third the most economical when large numbers are to be vaccinated at one time. If the virus is potent, the manner of supplying it is of no consequence.

As to the method of vaccination, linear incision is probably the most satisfactory.

The vital thing in connection with the keeping of vaccine virus is a low temperature; the lower the better. At room temperature the virus is liable soon to lose its potency. If the virus is kept sufficiently cold, the date of expiration given by the manufacturer may be regarded as dependable.

Sterile vaccine prepared by Noguchi's method has not been used extensively enough to justify an opinion as to its value under varied conditions. It seems not to be generally known that much of the regular vaccine virus on the market contains few bacteria. Some packages, indeed, are sterile by the ordinary tests.

As vaccine virus leaves the manufacturer it is generally of a satisfactory quality; but much of that obtained in the usual channels of trade is nearly or quite inert, on account of improper handling and storage.

ANTITOXIC SERUMS

Antidiphtheric Serum.—This product comes into consideration both as a prophylactic and as a curative agent; its value and mode of use are so well known that it need not be mentioned further here.

Antitetanic Serum.—The use of this agent in armies is at present extensive. It is understood that single orders for as many as 500,000 doses have been placed in America by European governments, and enormous quantities are being made in Europe. It has become the rule to give every wounded soldier a prophylactic dose of tetanus antitoxin as soon as possible after the wound is inflicted. During the early part of the war, the dose used was 1,500 American units; but, at least in the English service, this has been reduced to 500 units repeated every seven days "until the wound has healed or become healthy." It was found necessary to repeat the dose on account of the late development of tetanus in cases in which only a single dose was administered.

Dried antitetanic serum as an application to wounds has been recommended, but seems not to have found favor; certainly it has not replaced the subcutaneous use of the fluid serum.

As a curative agent, in the presence of clinical tetanus, 3,000 units of the serum should be administered intraspinally, at the appearance of the first symptoms; 10,000 units in addition should be given intravenously. The intraspinal dose should be repeated daily until improvement sets in, and the blood should be kept antitoxic by further subcutaneous doses of 10,000 units.

The war experience has confirmed what had been learned in civil practice, that as a curative agent the serum is not of great value, at least not unless used early, intraspinally, and in large doses.

ANTIBACTERIAL SERUM

Antimeningococcus Serum.—Some of the earlier reports on the use of this agent during the present war indicated that it had not proved satisfactory; at present, however, it is being used with success. The variability in the strains of meningococci encountered in various cases and in various outbreaks doubtless accounts in part for the failure to secure more uniform results. The lack of a definite potency standard makes it impossible to judge accurately of the value of any given specimen of serum. This is particularly unfortunate, as epidemic meningitis is especially liable to occur in camps in which large numbers of young men are brought together. The serum should be given early and persistently.

BACTERIAL VACCINES

Antityphoid Vaccine.—There seems to be no question about the great value of this agent. In military service it has been highly successful. It appears that, at least for military purposes, it is desirable to use a vaccine containing, in addition to *B. typhosus*, the paratyphoid organisms A and B. In the early part of the war, in some of the armies, the latter organisms were not used; and, in consequence, much paratyphoid occurred.

The administration of antityphoid vaccine varies in different hands. The procedure followed in America is to give 500,000,000 organisms; followed by double that dose in a week or ten days, and a third dose of the same size as the second after a further interval of a week or ten days. This product should be used reasonably fresh, though little is known of the rate of deterioration with age.

The question of the duration of the immunity is an important one. It has been customary in this country to regard the immunity as lasting about four years; but the experience of some of the European armies indicates that this period is too long. It is understood that revaccination is being practiced annually, and under some circumstances even after six or seven months.

AGENTS NOT WELL ESTABLISHED BUT WORTHY OF TRIAL

SERUMS

Antidysentery Serum.—It is well known that dysentery organisms of the Shiga-Kruse type produce toxins, and that it is possible to produce a serum which neutralizes these poisons. The evidence at hand indicates that such a serum should be tried in any case of bacillary dysentery due to organisms of the Shiga-Kruse type. As high as 80 c.c. have been given at a dose.

If dysentery should prevail to any considerable extent, it probably would be worth while to have serum prepared for the type or types of infection existing in the area in which the serum is to be used.

Antipneumococcus Serum.—The work done in recent years on the separation of pneumococci into groups, and the results of a specific treatment, indicate that antipneumococcus serum, potent against organisms of Group 1, may be expected to be of value in infections due to this type. On account of the difficulty and delay that may be incurred in arriving at a type diagnosis, not to mention the impossibility of this under many circumstances, some students of the subject recommend the use of a Group 1 serum in any case of pneumonia, recognizing, of course, that it will be of no value in many cases, but believing that the benefits of its early use in Group 1 infections justify this somewhat unscientific procedure. It seems clear that no serum other than that against Group 1 organisms is of value.

BACTERIAL VACCINES

Vaccines against bacillary dysentery have been employed in a prophylactic way, but the evidence as to their value is not established; at least such evidence has not been published. It appears to be difficult to prepare a vaccine which does not produce unduly severe reactions and yet gives promise of being effective. Dosage is one half, or less, that of antityphoid vaccine.

Anticholera vaccine is reported to have given satisfactory protection, and the data at hand warrant its use as a prophylactic. The doses are 500,000,000, and 1 billion organisms, with an interval of one week.

Meningococcus vaccine has been used, but with inconclusive results. A vaccine, prepared from the organisms occurring in the epidemic prevailing, would in all probability prove more useful than one made from stock strains. The dosage is about the same as for antityphoid vaccine.

Combined vaccines, consisting of the typhoid bacillus, the two paratyphoid, the dysentery bacillus and sometimes the cholera vibrio, have been used to some extent. There appears to be justification for the use of such combinations as preventives under special conditions.

Prophylactic and therapeutic vaccinations against wound infections have been carried on, but the results do not appear to be encouraging.

ANAPHYLAXIS

The danger of anaphylactic shock, ensuing when it becomes necessary to administer horse serum to a person who has been inoculated with horse serum at an earlier date, must be mentioned. The consensus of opinion is, however, that this consideration should not interfere with the use of any prophylactic or curative serum which may be required. It has been recommended that, when hypersensitiveness is suspected, a small dose (0.1 c.c.) of serum should be given half an hour prior to the full dose, the object being to desensitize the susceptible individual. Increasing doses should be given at half-hour intervals.

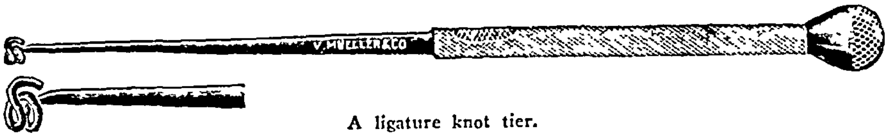
Clinical Notes, Suggestions, and New Instruments

A LIGATURE KNOT TIER

Henry R. Boettcher, M.D., Chicago

This instrument facilitates the tying of ligatures at points which the fingers cannot easily reach.

An assistant holds the handle of the forceps in the usual way for removal. The operator takes a ligature, ties a simple overhand knot around the handle of the forceps and brings the ends of the ligature down astride the handle, holding them between the first three fingers of the left hand. Then the tier is hooked on the end of the ligature nearest the right hand, from the under side, and given two turns to the right, which will put the ligature within the spiral or head of the instrument. The spiral is now pushed up to the knot, and the end of the ligature is held against the handle of the tier by the thumb or first finger, the other end being held by the left hand.



A ligature knot tier.

The knot is now pushed down the handle and over the tip of the forceps. The left end of the ligature should be kept well under the handle of the forceps, which helps to keep the knot over the tip, when the tying force is applied. This is now done, the forceps are removed, and a second knot is tied and pushed down.

In tonsil work, forceps with a tapering handle are the easiest to tie over, and plain sterilized catgut Nos. 1 and 0 are the best strengths to use.

It is well not to cut the ligature too close to the knot.

6336 Harvard Avenue.

PELLAGRA WITH ERYTHEMA OF SCROTUM AS INITIAL SKIN MANIFESTATION

C. E. Crosby, M.D., Great Falls, S. C.

D. R. T., man, aged 31, mill hand, married, first came under my care early in June, 1916, with symptoms of nephritis which readily improved under treatment. June 15, I was called to see him and found him suffering with acute appendicitis, for which he was immediately removed to a hospital and operated on.

August 15, he came to my office complaining of burning and itching of the scrotum. Examination revealed an intense reddening and slight thickening over an area about an inch in diameter on each side of the lower portion of the front of the scrotum. It was separated by a longitudinal strip of normal skin along the median raphe, and the erythematous area on the right side was somewhat larger and more intensified than that on the left. The junction of the reddened area with the normal adjacent skin formed a distinct line of demarcation, the two areas being essentially bilateral as regards the median raphe with no communication at any point. These areas later underwent the changes characteristic of pellagrous skin lesions, ending with complete desquamation.

In about two weeks the mouth became sore and red. This condition later developed into a typical pellagrous stomatitis which was followed, about five days later, by a severe diarrhea necessitating constant access to stool.

About September 15 a mild erythema was noticed on the knuckles of both hands which, a few days later, extended to cover the backs of both hands and lower portion of the dorsums of both wrists. These areas were sharply outlined by definite lines of demarcation and later terminated in the usual desquamation.

The patient stated that since returning from the hospital he had lived almost exclusively on bread and molasses. Fe was instructed to leave off the bread and molasses and eat fresh meats, fresh milk, eggs and legumes, which he secured with some difficulty, as he had not been able to work since June. September 30, he had practically recovered from his attack of pellagra, and was able to return to work. Since that time he has passed an examination for life insurance.

TREATMENT OF SKIN EROSIONS WITH PARAFFIN *

Elwood B. Haworth, M.D., Pittsburgh
Fellow of the American College of Surgeons; Surgeon to Western Pennsylvania Hospital

In the treatment of severe burns, or of acid corrosions, or of wounds that fail to epitheliate, it is advisable to use the paraffin treatment. We have had eminent success with this method of therapy, and we shall describe here how the wax is made and how it is applied.

PREPARATION OF WEST PENN WAX

The ingredients are mixed in these proportions:

Paraffin (Gulf Refining Co., Pittsburgh)	70.0 gm.
Liquid petrolatum, U. S. P.	3.0 c.c.
White beeswax	10.0 gm.
Rosin	7.0 gm.
Resorcin	0.2 gm.
Sudan III	0.05gm.
Alcohol (95 per cent.)	10.0 c.c.

The paraffin and the oil are melted in a casserole over asbestos board, the direct fire being used. The resorcin is dissolved in the alcohol, and added drop by drop to the molten paraffin with constant stirring. The mixture is now heated until all the alcohol is evaporated. The beeswax is stirred in until melted, heat being used if necessary. Then the rosin is added and mixed in thoroughly while the casserole is being heated. The mixture can be poured into molds and cooled.

It is possible to incorporate a number of ingredients in the West Penn wax, as salicylic acid, gum benzoin, etc., which may be useful in the treatment of skin affections. These substances are incorporated by dissolving them in alcohol and thoroughly admixing them in the melted paraffin, until all the alcohol has evaporated.

TREATMENT OF BURNS BY MEANS OF WEST PENN WAX

When a severe burn of recent occurrence presents itself, we puncture all the blebs and remove all the dead skin. The melted wax is now applied directly over the burn by means of a camel's hair brush. A piece of gauze or a thin piece of cotton is placed over this application, and this is again painted with wax so that the gauze or cotton is firmly embedded in the wax. The whole surface is now bandaged with loose cotton. By permitting a piece of the cotton or gauze to project between the two layers of wax, it is quite feasible to remove the wax by one gentle pull. When the wounds are very painful and it is not practical to paint the wound with a brush, the wax is applied to the surface by running a strip of gauze through the melted wax and applying directly.

If the wound is wet it is necessary to dry it with hot air; otherwise the wax will not stick to the surface. This can be done by means of an electric hot air generator, commonly used by barbers.

In old wounds or burns that are septic, it is essential first to render the surface clean by means of Dakin's neutral solution of chlorinated soda, and then treat it with the wax as if it were a freshly burned surface.

The West Penn wax is very flexible. On cooling it contracts and exerts a suction action, thus inducing an active hyperemia and keeping the wound air tight. The resorcin is added as a mild antiseptic and as a preventive of foul odors that might otherwise be formed. Sudan III is used as a stimulant of epithelialization. Scarlet red may be used instead.

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* From the Biochemical Laboratory, Western Pennsylvania Hospital.

To Know.—When you know a thing, to hold that you know it; and when you do not know a thing, to allow that you do not know it; this is knowledge.—Confucius.

Therapeutics

DISTURBANCES OF THE KIDNEYS

(*Continued from page 1321*)

TREATMENT OF UREMIA

The indications for the treatment of uremia may thus be itemized: (1) the diet; (2) elimination; (3) rest; (4) pain; (5) care of the circulation; (6) care of the central nervous system; (7) control of edema.

1. At the first evidence of uremia, the diet should be diminished to the smallest amount possible, such as a pint of milk a day. The use of water should not necessarily be restricted, unless edema is extensive and edema of the lungs is feared; if this is the case, it is well to restrict the intake of water in the endeavor to have the exuded liquid resorbed into the blood vessels and excreted in some way, if not by the kidneys, by the skin or bowels, as a certain amount of purging must be caused, and as perspiration, if not too profuse, is desirable. If, on the other hand, edema is not extensive, and catharsis and perspiration are caused, a liberal amount of water should be given the patient in order to facilitate these processes. It should be emphasized, however, that profuse catharsis causing circulatory weakness, or profuse perspiration causing exhaustion do not cure patients with uremia; furthermore, if water is not supplied and well absorbed into the blood vessels, the excretion of water from the blood vessels by the bowels or skin, or both, causes a concentration of the toxins which cause uremia. Hence, the nervous system must be more seriously irritated.

It may be well to note here, however, that Haldane and Priestley[116] have recently found that when large amounts of water are given to a normal person, and the output of urine is increased and the specific gravity lowered, the blood concentration remains the same. This was also true when profuse perspiration was caused. They came to the conclusion that a diminished hemoglobin percentage or an increased volume of blood was not caused by the intake of such amounts of water as would cause diuresis. This does not prove that in abnormal conditions, such as uremia, the blood may not become more concentrated by profuse diarrhea and sweating, or become less concentrated by the ingestion of sufficient amounts of water.

The scanty diet of a pint of milk or a quart of barley water a day, suggested above, cannot be continued more than a few days without the patient becoming seriously weak. If he is not comatose, the diet should be increased by some thin liquid cereal, with more or less alkali, such as sodium bicarbonate. The object of the alkali and the carbohydrate is to prevent the added element of acidosis. The alkali, however, should not be given in large quantities if there is serious edema, as it may aggravate this condition.

If convulsions seem imminent, the only food the patient requires is water, barley water, oatmeal gruel, malted milk, orange juice or lemonade, according to the condition of his central nervous system and stomach. If he is vomiting, and emptying his stomach well, hot water is the required treatment. If he is nauseated, but does not vomit, the stomach tube may be used to wash out the stomach, which will relieve him greatly. Occasionally bismuth and soda will soothe the stomach; a mustard paste over the epigrastrium may stop the nausea by counterirritation; or an electric pad may be of advantage. If more than a day or two is passed during which he is unable to retain nourishment, colon injections of water containing sodium bicarbonate should be given, as starvation may soon cause an acidosis which will add to the intoxication.

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[116] Haldane, J. S., and Priestley, J. G.: Jour. Physiol., 1916, 50, 296, 304.

2. Bowel movement should be induced by compound jalap powder, 2 gm. (30 grains), repeated in four hours if free movements are not caused. Calomel or any other mercury may be injurious when a patient is uremic. If he is comatose and free bowel movements are urgently needed, 2 or 3 drops of croton oil on granulated sugar may be placed on the tongue, or may be given diluted, if the patient is able to swallow. If the bowels have moved freely several times, the patient should not be given another cathartic for twenty-four or thirty-six hours; but when the bowels have not moved for twelve hours or more, washing out of the colon with warm water is efficacious.

Profuse dripping perspirations are not essential in uremia. Great benefit apparently has been derived when hot air directed under the bed-clothing, actual body baking, steam bath (or some other procedure), has caused profuse perspiration. When patients survive such treatment, it is because enough dilatation of the blood vessels of the surface of the body has occurred to relieve the kidney congestion. But if the kidneys cannot so react, the blood is depleted of water, the retained toxins are in more concentrated form, the kidneys may not improve, and the danger is increased. Too profuse perspiration and general surface relaxation may also lower the blood pressure below the point desired, and the patient may die of circulatory failure. Hot packs to the back over the kidney region will cause enough local heat to be of more or less benefit to the kidneys by relieving local congestion, at the same time causing enough general perspiration to accomplish a relaxation of the skin without the use of more strenuous measures.

Pilocarpin is not usually indicated. It produces not only profuse perspiration, but also profuse bronchial secretion, so that the patient almost drowns in his own bronchial fluids. Frequently this flow of perspiration and bronchorrhea must be checked by atropin, if it is not too late. Drugs which act as strenuously as pilocarpin are not advisable.

3. Rest of mind and body is essential in uremia. The greater the muscle movements, the greater the nitrogenous waste; the more restless the brain, the more restless the body. When muscle cramps occur and convulsions seem imminent, a quieting dose of chloral, sufficiently large to be effective, should be administered, unless the patient is afflicted with cardiac weakness and low blood pressure. If the patient's heart is weak, if he cannot sleep and is very restless, codein should be given instead of chloral.

4. Some patients who are uremic suffer acute pain, either cardiac or abdominal; this acute pain must be stopped by codein or morphin, even though the impending coma may be hastened thereby. It is imperative that agonizing pain be terminated, even in uremia. Fortunately, not many patients who are uremic suffer such pain; they are more likely to be stupid.

5. The blood pressure is generally high, and large doses of nitroglycerin are advisable; or the chloral resorted to for sleep, or the bromid used to soothe general restlessness will reduce the blood pressure. Catharsis and sweating also tend to lower the blood pressure. However, one must be cautious lest the suddenly lowered blood pressure be coincident with heart failure. If the heart is failing, the diastolic pressure becomes high, the systolic pressure is lowered, and the pulse pressure is shortened. This frequently occurs in the uremic condition of cardiovascular-renal disease, but whether or not uremia is present in that disease, digitalis, or perhaps an intravenous dose of strophanthin, should be given. However, it should be remembered that strophanthin may have too great an effect on the heart, if digitalis has previously been given.

If the blood pressure is very high, and apoplexy or sudden dilatation of the heart threatens, venesection should be done. This is also perhaps the most valuable treatment for convulsions or coma. The amount of blood withdrawn depends on the individual case. Subsequent to the venesection a colon injection should be given, the water containing a small amount of sodium bicarbonate, which should be allowed to be absorbed. If there is no edema or a very small amount, as in chronic interstitial nephritis, physiologic sodium chlorid solution may be introduced into the colon, the object being to fill the blood vessels again and to dilute the toxins they contain, thus reducing the irritation of the brain. Whether or not venesection has been done in uremia, colon irrigation is often of great value, with the water at a temperature of 110 F. A rectal tube may be passed a short distance, and, with the hips elevated, the water allowed to flow into the colon, where it may be allowed to remain a short time, and then siphoned out. This procedure should be repeated every three hours until several treatments have been given, as such irrigation tends to relieve the acute kidney congestion.

6. With frequent convulsions, chloral or bromids may be given by the mouth, or, if they cannot be swallowed, by the rectum; but the latter method of administration is not very satisfactory. Venesection, fomentations over the kidneys, heat, and croton oil catharsis are preferable. If frequent convulsions seem to threaten the life of the patient, chloroform inhalations should be given. Coma may be due to the intoxication, to cerebral pressure from an exudate into the ventricles, or from actual edema of the cerebral tissues. Spinal puncture will often drain fluid from the ventricles, but it would not be of benefit in edema of the cerebral tissues. Hot water bags to the feet and legs and heat over the abdomen will draw the blood from the head, and will lessen the cerebral congestion. Even with convulsions and coma, unless it is the terminal stage of a chronic nephritis, the patient may recover.

There is no detoxicant in uremic poisoning more successful than large doses of thyroid, and if 10 or 15 grains of this substance can be absorbed from the stomach there is generally an improvement, although it may be temporary. When convulsions seem imminent, and when uremic symptoms appear, thyroid should be given in 5-grain doses, or, with the stronger preparations now offered, in 2-grain doses, two or three times daily.

7. If the edema is cardiac, the treatment is that of cardiovascular-renal disease, and if the patient is uremic, digitalis or strophanthin may be of great value. The blood pressure may not be high in a serious gen-

eral anasarca, and caffein may be of value. Exhausting purging of the bowels should not be caused, as heart failure may result.

It may be necessary to remove large exudates from the pleural cavities or from the peritoneal cavity, but when such complications occur with uremic symptoms, the prognosis is almost hopeless. With such general anasarca, theocin may be tried; but it has been proved that this does not increase the output of nitrogen, although it may increase the output of sodium chlorid and water.

If the patient survives the uremic condition, and the kidneys begin to excrete, the treatment is that outlined for the convalescence of acute nephritis.

DECAPSULATION.

Decapsulation was first suggested by Edebohls, in 1901, and was done by him and by others with the hope that a new blood supply could be created around the kidney structure. Also, if the kidney was so acutely congested and swollen that the capsule formed a constriction, the release of this constriction might improve and save the kidney, or both kidneys, and, temporarily at least, prevent uremia and save life. This operation has not proved very successful, and certainly should not be done in chronic nephritis. However, decapsulation may be considered (1) in acute eclampsia when emptying of the uterus does not stop the convulsions; (2) in toxic nephritis (mercury, arsenic and phenol poisoning); and (3) in acute nephritis following an acute infection when uremia is present and there is complete anuria.

PUERPERAL ECLAMPSIA

If possible, this condition should be forestalled. Albuminuria, casts, and symptoms of kidney disturbance during pregnancy should, ordinarily, call for a termination of the pregnancy. Too great conservatism is not justifiable. The longer the kidneys are congested from the abdominal pressure, especially if nephritis has previously occurred, the greater is the hazard to the mother if an attempt is made to save the child, therefore such an attempt should not be made. If the kidney inflammation is not discovered until a short time before term, consultation may decide that it is best not to hasten the birth of the child. On the other hand, every day increases the danger, as the muscular efforts of the mother at the time of parturition load the blood with nitrogenous toxins, especially creatin, and eclampsia is almost inevitable.

If kidney defects are not discovered until parturition has begun, eclampsia may develop rapidly. In this case chloroform must be administered and the evacuation of the uterus hastened. Considerable hemorrhage from the uterus is conservative and life-saving, as the loss of a large amount of blood loaded with toxins may save the patient, after the manner of a venesection; such loss of blood is apparently even more effective in nephritis than that caused by venesection.

Of course it is recognized that puerperal eclampsia may occur when the urine has shown no signs whatever of nephritis. Thyroid in large doses is especially effective in this condition, and should always be given in puerperal eclampsia. After the uterus is evacuated, the subsequent treatment is that of uremia.

(To be continued)

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

PARRESINE.—A mixture composed of paraffin (melting point 48 to 49 C.), 94 to 96 per cent.; gum elemi, 0.20 to 0.25 per cent.; Japan wax 0.40 to 0.50 per cent.; asphalt, 0.20 to 0.25 per cent., and eucalyptol, 2 per cent. To this mixture is added 0.5 to 1.0 per cent. solution of alkannin in eucalyptol and a minute quantity of gentian violet, these being employed to bring the product to a standard color.

Actions and Uses.—Parresine acts mechanically, essentially like simple paraffin. When applied to burns and denuded surfaces, it excludes the air to a certain extent and relieves pain, provides a soft, pliable splint-like covering to the wounded surface, keeps the parts at a relatively uniform temperature, immobilizes the epidermal tissue, and may aid the formation of new tissue by acting as a scaffolding for newly formed cells.

Parresine is mainly used in the treatment of burns. It is also said to be useful in the treatment of "frostbite," "chilblains," and for covering denuded surfaces.

Dosage.—For use, parresine is melted and applied while liquid by means of an atomizer or brush in a thin layer over the surface of the wound, which has previously been dried by a current of hot air. A thin layer of cotton is then applied and then another layer of melted parresine. This is usually covered with cotton and bandage.

Prepared by the Abbott Laboratories, Chicago. No U. S. patent. U. S. trademark applied for.

Parresine has the properties of paraffin, slightly modified by the addition of gum elimi, Japan wax and asphalt.

It is of a grayish smoky color, has the odor of eucalyptol, and melts at 47 to 48 C. (117 to 119 F.).

SIOMINE.—Hexamethylenamine tetraiodide $(CH_2)_6N_4I_4$. It contains 78.5 per cent. iodine.

Actions and Uses.—Siomine is decomposed in the intestine with formation of hexamethylenamine and iodide, the rate of absorption and excretion being essentially the same as that of inorganic iodides. It therefore produces the effects of ordinary iodides, from which it differs only in that it can be administered in solid form. The administration of siomine provokes the luetin reaction.

No therapeutic claims are made for the hexamethylenamine component of siomine, this being present only to render the substance insoluble.

While ordinarily the hexamethylenamine content of siomine may be ignored, the drug should be discontinued if any signs of hexamethylenamine intolerance should arise, such as vesical irritation or hematuria.

Dosage.—The same as that of potassium iodide; but siomine is administered in solid form.

Manufactured by the Howard-Holt Company, Cedar Rapids, Iowa. U. S. patent applied for. Canadian Patent No. 166652. *U. S. trademark* No. 107998.

Siomine Capsules, ¼ grain.—Each capsule contains siomine ¼ grain and milk sugar 4¾ grains.

Siomine Capsules, ½ grain.—Each capsule contains siomine ½ grain and milk sugar 4½ grains.

Siomine Capsules, 1 grain.—Each capsule contains siomine 1 grain and milk sugar 4 grains.

Siomine Capsules, 2 grains.—Each capsule contains siomine 2 grains and milk sugar 3 grains.

Siomine Capsules, 5 grains.—Each capsule contains siomine 5 grains and milk sugar 2 grains.

Hexamethylenamine tetraiodide was described by Herton in 1888, and a process essentially the same as that used for the preparation of siomine is described by Sugiura and Falk (*Biochem. Bull.*, 1916, v, 18). Under the name siomine it was first proposed for therapeutic use.

Siomine is prepared by precipitating hexamethylenamine with iodin-potassium iodid solution, and purifying the precipitate.

Siomine is a red powder, having a slight but characteristic odor and taste. When heated to 138 C., it decomposes with violence.

Siomine is slightly soluble in acetone, alcohol, chloroform, carbon disulphide and ether (with partial decomposition). It is almost insoluble in water, but dissolves with decomposition in aqueous solutions of alkali iodides, of sodium thiosulphate and in diluted hydrochloric acid.

If 5 Gm. siomine is heated with 15 Cc. diluted sulphuric acid, first vapors of iodine (recognized by their color and effect on starch paper) are evolved, later formaldehyde is given off (recognized by its odor and the blackening of paper moistened with silver ammonium nitrate test solution). If the siomine sulphuric acid mixture is heated until colorless and then supersaturated with potassium hydroxide solution, ammonia is evolved (recognized by its odor and effect on red litmus paper).

If a drop of strong sulphuric acid is added to 0.5 Gm. siomine, decomposition occurs with evolution of brown fumes.

If siomine is incinarated, not more than 0.03 per cent. of ash remains.

If 0.5 Gm. siomine is warmed with 0.5 Cc. hydrochloric acid and 5 Cc. water until a clear solution results, a few drops of barium chloride test solution should not produce a precipitate (*sulphates*).

MERCURIC SALICYLATE (See N. N. R., 1917, p. 190-1).

Sterile Ampules of Mercury Salicylate, 1½ grains.—1 Cc. of suspension contains 0.09 Gm. (1½ grains) of mercuric salicylate. Each ampule contains more than 1 Cc. of suspension.

Sterile Ampules of Mercury Salicylate, 2 grains.—1 Cc. of suspension contains 0.12 Gm. (2 grains) of mercuric salicylate. Each ampule contains more than 1 Cc. of suspension.

Prepared by Hynson, Westcott & Dunning, Baltimore, Md.

ARSENPHENOL-AMINE HYDROCHLORIDE.—Arsenphenol-Aminae Hydrochloridum. — $HCl.NH_2.OH.C_6H_3As:As.C_6H_3OH.NH_2HCl+2H_2O$.—The hydrochloride of 3-diamino-4-dihydroxy-1-arsenobenzene, corresponding to 31.57 per cent. arsenic (As).

Actions, Uses, Dosage, Physical and Chemical Properties.—The same as those of salvarsan (see New and Nonofficial Remedies, 1917, p. 45).

Diarsenol.[+]—A proprietary brand of arsenphenol-amine hydrochloride.

Manufactured by the Synthetic Drug Co., Toronto, Canada. Canadian patent No. 133,636. U. S. trademark Nos. 90,128 and 90,129.

Diarsenol, 0.1 Gm. Ampoules.—Each hermetically sealed ampule contains diarsenol 0.1 Gm.

Diarsenol, 0.2 Gm. Ampoules.—Each hermetically sealed ampule contains diarsenol 0.2 Gm.

Diarsenol, 0.3 Gm. Ampoules.—Each hermetically sealed ampule contains diarsenol 0.3 Gm.

Diarsenol, 0.4 Gm. Ampoules.—Each hermetically sealed ampule contains diarsenol 0.4 Gm.

Diarsenol, 0.5 Gm. Ampoules.—Each hermetically sealed ampule contains diarsenol 0.5 Gm.

Diarsenol, 0.6 Gm. Ampoules.—Each hermetically sealed ampule contains diarsenol 0.6 Gm.

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Medicine During the Colonial Period.—During the colonial period, the status of medicine on this continent was of the most provincial character, its practitioners being sometimes ministers of the gospel, oftener men who had got their training with physicians under indentures of apprenticeship with no medical degree whatever, self-trained midwives for obstetric cases, back-woods sawbones who had acquired their knowledge of surgery in the most rough and ready fashion, and a few settlers who had acquired a legitimate education in Europe, with the still more favored few whose parents were able to give their sons a proper medical education at some European university. The title "doctor" was not even employed in the colonies before 1769. Medical legislation in the several states was mainly centered on the regulation of physicians' fees, and with the exception of the Acts of Massachusetts in 1649 and 1699, and of New York in 1665, little of it was restrictive, in the sense of excluding the incompetent, or of application to the prevention of infectious diseases.—Lieut.-Col. C. C. McCulloch, Jr., U. S. Army: The Scientific and Administrative Achievement of the Medical Corps of the United States Army, *The Scientific Monthly*.

Special Article

THE MEDICAL OFFICER OF THE ARMY

IV

RECRUITING; EXAMINATION OF RECRUITS; STATUS OF MEDICAL OFFICER

The recruiting service of the army is practically in the hands of the medical department. The recruit is first obtained by line officers detailed in cities and towns for the purpose. But they act only as advertising agents, and the approved candidate is sent to a recruit depot to be physically examined and sworn into the service. These recruit depots are distributed throughout the country, and are located at Fort Slocum, N. Y.; Columbus Barracks, Ohio; Jefferson Barracks, Mo.; Fort Logan, Colo.; Fort Sam Houston, Texas, and Fort MacDowell, Calif. At each depot there is a line officer in command, with a permanent personnel of selected line officers and noncommissioned officers who have charge of the training of the recruits. A large staff of medical officers is also on duty at these stations.

THE PHYSICAL EXAMINATION

When a recruit arrives at a recruit depot he immediately receives his physical examination. This is completed by medical officers detailed for the purpose, and is particularly thorough. Under the volunteer system of recruiting, pressure is at times brought to bear on the examining surgeon to accept men who are subnormal. This pressure may be from the man personally, or from some one else who is interested in him. This naturally adds to the difficulties of the situation, but it is always the wisest course for the examining surgeon to reject all those candidates who do not come up to the standard provided in the recruiting regulations.

The recruit is not required to be a physically perfect man, but must be structurally between certain limits. For instance, no man is accepted who is less than 5 feet 4 inches in height, or less than 120 pounds in weight. Also, no one is accepted who weighs over 190 pounds. There is no limit in height for recruits entering the infantry or the staff corps, but cavalry and artillery recruits cannot be over 5 feet 10 inches and 6 feet, respectively.

Following is a brief outline of the examination:

STATEMENT OF APPLICANT

Have you found that your health and habits in any way interfere with your success in civil life? And if so, give details: ....

Have you ever since childhood wet the bed when asleep? .....
Do you consider that you are now sound and well? ....
What illness, diseases, or accidents have you had since childhood? ....

Have you ever had any of the following? If so, give approximate dates:

Spells of unconsciousness or convulsions: ....
Gonorrhea: .... Sore on penis: ....
Have you ever raised or spat up blood? ....
When were you last treated by a physician, and for what ailment? ....
Have you ever been under treatment at a hospital or asylum, and, if so, for what ailment? ....

I certify that the foregoing questions and my answers thereto have been read over to me; that I fully understand the questions, and that my answers thereto are correctly recorded and are true in all respects.

I further certify that I have been fully informed and know that if I secure my enlistment by means of any false statement of misrepresentation I am liable to court-martial for fraudulent enlistment.

....
(Signature of applicant.)

PHYSICAL EXAMINATION AT PLACE OF ACCEPTANCE.*

(Applicant stripped.)

Weight, ... lbs.; height, ... inches.
Eyes: ....
Vision—Right eye, ...; left eye, ...
Ears: ....
Hearing—Right ear, ...; left ear, ...
Girth of chest (at nipples): At expiration, ...inches.
At inspiration, ...inches.
Flat foot: ....
Remarks: ....

I certify that I have personally examined the applicant, and that, to the best of my knowledge and belief, he fulfills the physical and legal requirements for enlistment.

....
Recruiting Officer.

....
(Place.)

....
(Date.)

*If the applicant is enlisted at place of acceptance, this report will not be filled out, except where examination at place of enlistment is made by a civilian physician.

PHYSICAL EXAMINATION AT PLACE OF ENLISTMENT

(Applicant stripped.)

Weight, ...lbs.; height, ...inches.
Girth of chest (at nipples): At expiration, ...inches.
At inspiration, ...inches.
General examination (head, chest, abdomen, extremities):....
Nose and throat: ....
Heart: ....
Genito-urinary organs (urine will be examined in suspicious cases): ....
Hernia: ....
Hemorrhoids: ....
Flat foot or other deformities of feet: ....
Wassermann reaction (Regular Army only): ....
Eyes: ....
Vision—Right eye, ...; left eye, ...
Ears: ....
Hearing—Right ear, ...; left ear, ...
Teeth:

		Right	Left
Missing Teeth:	Upper,	8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8
	Lower,	8 7 6 5 4 3 2 1	1 2 3 4 5 6 7 8

(Strike out those that are missing.)

Rules for the examination of recruits are issued in pamphlet form from the War Department under the title of General Order 66 and Circular 6, and they set forth the defects which call for the rejection of candidates. These are all pathologic defects, and these specifications should be carefully followed by all officers performing this work.

BLANKS AND RECORDS

As soon as the recruit has passed his physical examination, he is sworn into the service by the recruiting officer, who is a medical officer. At the same time a blank, called the physical examination for enlistment, is filled in. This paper contains a record of his complete physical examination, and also any information in regard to the previous life of the recruit which can be obtained from him.

The enlistment paper, which is made out and signed by the recruit at the time he is sworn into the service, is principally the oath which every one takes on entering the military service, and is signed in the presence of witnesses.

A designation blank is also filled in and signed by the recruit. This is in reality his will, and he designates in this paper his heir or heirs. In case of his death during service, besides his personal effects, any pay due the soldier and six months' additional pay is sent to his heir.

After the recruit has been sworn in, his identification records are made. These records consist of a front and side view photograph, any indelible marks which appear on his body (scars, moles, etc.), and the prints of all his fingers. These papers are sent on to Washington and are filed there at army headquarters as part of the record of the soldier. In time of war the photograph is not taken of volunteer troops.

Another paper is completed at this time and is called a descriptive and assignment card. This contains a complete description of the soldier, his principal physical characteristics and the record of vaccination, typhoid immunization and any other data which it is important for his future company commander to know.

VACCINATIONS

The man then receives his vaccination against smallpox and his typhoid prophylaxis. These two are administered to every recruit regardless of vaccination scars or unverified statements of previous typhoid prophylaxis. A record is made of this work, so that it is always known at what time such vaccinations have been given.

TRAINING OF THE RECRUIT

The recruit is then turned over to the recruit companies and there receives his first training. This training consists partly of physical exercises given primarily to develop the soldier as rapidly as possible and to permit him to perform his full military duties when he is assigned to a regiment. He also receives his training in discipline and the other duties of a soldier. The instruction of the recruit is participated in by the medical officers, who give instruction in personal hygiene, including talks on venereal diseases, the latter being considered from both the moral and the physical standpoints.

As soon as his training has progressed sufficiently to justify his assignment to a permanent company, the recruit is sent to some regiment. There his military training progresses in the company of his fellows, and after six or twelve months' service he is classed as a trained soldier.

FOOD AND CLOTHING

The food and clothing of the enlisted man are furnished him free of charge by the government, and his general welfare is looked after closely by both line and staff officers.

The rations of the army are furnished by the quartermaster's department and obtained by the organization commander on presenting a ration return. This is a blank on which is shown the number of men entitled to subsistence and the period for which this subsistence is drawn. This period is usually one month. Actual food can either be drawn from the store house, or the company commander receives a credit of a certain amount for each man's ration, and this credit can be used to purchase the supplies either from the quartermaster's department or the outside dealer, though it is required that any articles desired should be purchased from the quartermaster if these articles are on hand there. The money value of the ration in recent orders was 34 cents per man per day. Those entitled to be rationed at the government's expense are enlisted men, prisoners of war, military prisoners, nurses, and civilians employed by the army in the field. The officer is not rationed by the government, but has to purchase his own food. Attached to each commissary store house is usually a sales commissary from which articles not included in the ration can be purchased by individual officers or men, or by any organization.

With each regiment or other organization in the field an exchange may be established by the organization. This exchange is a small store at which articles desired by the soldier can be purchased at a small price. Usually a small profit is charged, and this profit is turned into the mess of the organization to furnish additional articles of food to supplement the rations provided. These supplemented articles are not required, but serve to vary the food for the men. At the posts and other stations in the army these exchanges are in buildings provided for the purpose, and these buildings also contain gymnasiums, swimming pools and other means of amusement for the entire command.

PAY

All troops are paid monthly on pay rolls which are made out at the end of each month. These rolls contain the names of the men of the organization and any notations which the paymaster may require to assist him in accurately estimating the pay due the individual. These notations are to be accurately made so that the proper deductions or additions can be made. Officers are paid on pay vouchers presented by each officer on the last day of the month. These vouchers are simple statements, and usually there is no difficulty in filling them out in the proper manner. The pay for the different grades is as follows: first lieutenant, $2,000 per annum; captain, $2,400; major, $3,000; lieutenant colonel, $3,500; colonel, $4,000. In addition, lieutenants, captains and majors receive 10 per cent. increase of pay for every five years of service up to twenty years.

If officers are stationed where no quarters are provided for them, as in cities or towns, they are entitled to commutation of quarters, which is added to their pay by the paymaster at the end of each month. This commutation consists of $36 for first lieutenant, $48 for captain, and $60 for major. Under such circumstances he is entitled also to commutation of heat and light, which amount is shown by tables published in army regulations. If he is stationed where public quarters are provided he is entitled to a house, heat and light at that station. Every officer is also entitled to forage for his authorized mount and mileage at 7 cents a mile when traveling under orders.

CLOTHING ALLOWANCE

Every soldier on entering the service receives his clothing at the government expense. This clothing is not issued to him in the quantity he desires, but a certain amount of money is allotted to him as a clothing allowance. Clothing can be drawn every six months in value equal to the amount of the allowance provided for that period. If the value of the clothing drawn is more than the allowance for the period, the soldier is required to pay the difference at the end of the period. If any of this allowance remains to the credit of the soldier at the end of his enlistment, he receives that on his discharge from the service. At the present time the initial clothing allowance for each soldier is $43.05. The total amount of his allowance for his entire enlistment is $142.26.

TERM OF SERVICE

After the enlisted man has completed his term of service, which by law at present is seven years, he is discharged from the service of the United States. This entire seven years is not passed with the colors, but the soldier serves three or four years with the colors and is then furloughed to the reserve. It is allowable for the commanding officer to discharge a soldier after one year's service if that service has been thoroughly satisfactory and he is to all intents and purposes a trained soldier. During the time of the present war, men are being recruited to serve until peace is declared, then to be discharged from the service of the United States.

DISCHARGE

In addition to an honorable discharge at the expiration of a man's term of service, he may also be discharged for the following reasons: by order of the president of the United States or the secretary of war; by sentence of a court martial; by purchase; on a surgeon's certificate of disability; on account of sentence to imprisonment by a civil court; by a board of officers, and by order of one of the United States courts on a writ of habeas corpus.

To be discharged by sentence of a court martial, the soldier must have been tried by a general court martial, which is the highest military court allowed by law. This sentence must be approved by the military commander who convened the court for the trial of the soldier.

Discharge by purchase can be obtained by a soldier on account of some personal emergency, such as the necessity of obtaining a position paying more salary, for the support of dependent relatives. This discharge must also be approved by higher authority.

Discharge for disability is obtained after observation and examination by officers of the medical department; but their conclusions must be approved by the department or division surgeon. If a soldier is discharged for disability incident to the service, he is entitled to a pension, and also to residence in the National Soldiers' Home at Washington, D. C.

A soldier who is considered inapt or who does not possess the required degree of adaptability for military service, or is morally unfit, may be discharged on the recommendation of a board of officers which has thoroughly investigated his case.

When a soldier receives an honorable discharge, he is given a discharge certificate entitled "An Honorable Discharge from the Service of the United States." But when a soldier is discharged for fraudulent enlistment, or on account of having been disqualified physically or morally through his own misconduct, or on account of imprisonment by a civil court, he receives a discharge "without honor." If he is discharged by the sentence of a court martial, he receives a "dishonorable discharge."

After thirty years of service a soldier is entitled to retirement on three-fourths pay. This service may be in either the army, the navy or the marine corps. In addition to the pay allowed them, these men are entitled to $9.50 per month for commutation of clothing and rations, and $6.25 per month in lieu of quarters, fuel and light. If living in the vicinity of an army post or station, they are entitled to medical attention free of charge.

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SATURDAY, MAY 12, 1917

* * *

THE FIRST CALL OF OUR ALLIES WAS FOR PHYSICIANS. TWO UNITS ARE ALREADY ON THE ATLANTIC BOUND FOR FRANCE. THE DEMAND FOR MEDICAL MEN IS GREAT. THE TIME HAS ARRIVED FOR PHYSICIANS TO ACT. THE YOUNGER MEN ESPECIALLY WHO HAVE BEEN DELIBERATING AS TO WHETHER OR NOT THEY SHOULD OFFER THEIR SERVICES SHOULD DECIDE NOW. STOP DELIBERATING AND ACT!

* * *

PROPHYLACTIC INOCULATION AGAINST PNEUMOCOCCAL INFECTION

Since the artificial production of immunity has been one of the most effective means for the control of acute infectious diseases, it seems strange that so few attempts have been made to determine the value of this procedure in the prevention of lobar pneumonia. A formidable argument against prophylactic immunization in pneumonia has always been that one attack does not confer protection against a second attack but often leaves the patient more susceptible—a fact which seemingly differentiates lobar pneumonia from almost all other acute infectious diseases. In recent years, however, our ideas of pneumonia have greatly changed, and in the light of newer facts this objection cannot be seriously maintained. Neufeld and Händel and others found that an immune serum of high potency could be developed in animals by repeated inoculation with living virulent pneumococci which was highly specific only for certain strains. There were many strains of pneumococci that were in no way influenced by this immune serum, but equally efficient serums could be developed for these particular strains. These observations were greatly extended by Dochez and Gillespie[1] in America, and Lister[2] in South Africa, who demonstrated that pneumococci isolated from patients with lobar pneumonia could be divided into groups according to their biologic reactions. It has been found, too, that the serum of pneumonic patients or animals suitably immunized against pneumococci will agglutinate organisms belonging only to its homologous group, other groups being entirely unaffected. It is apparent, therefore, that the type of organism concerned in the causation of an attack of lobar pneumonia must be of primary importance from the standpoint of specific therapy, whether it is curative or prophylactic. Indeed, the use of an antipneumococcic serum on the basis of this grouping has already given encouraging curative results, particularly in the instance of Group 1 infections.

The application of these newer observations on the biologic differences of pneumococci to the problems of prophylactic inoculation has recently been made by Lister,[3] and the results are at least encouraging. In one group of experiments he injected rabbits with large doses of a pneumococcus vaccine containing equal amounts of the most important biologic groups concerned in the causation of lobar pneumonia in the Rand, where the disease is disastrously prevalent. Rabbits inoculated three times either subcutaneously or intravenously with such a vaccine developed opsonin and agglutinin for all the biologic types of organisms contained in the vaccine. Moreover, these immunized animals were resistant to large doses of virulent pneumococci of the homologous groups. In another group of experiments, men were inoculated subcutaneously with a vaccine containing 6,000 million dead pneumococci of each group against which immunity was desired. After three injections at seven day intervals, a marked increase in the opsonin and agglutinin for the homologous groups was observed in the blood, and these antibodies were specific for the various types of pneumococci contained in the vaccine. Furthermore, some degree of immunity, as judged by the reactions of the serum, seemed to persist for at least eight months after inoculation. When we consider these experiments, it is obvious that if the problem had been the immunization of rabbits against pneumococcal infection, it could be said that the method has been put to the crucial test and that the opsonin and agglutinin content of the immune rabbit serum would be a good index to the degree of immunity. In the instance of man, however, the results are not so striking. Although suitable inoculation will give rise to similar antibodies as in the rabbit, it remains to be determined whether there is sufficient immunity to have real protective value. Since there is a great mass of evidence at hand indicating that opsonins and agglutinins are important factors in the mechanism of recovery in lobar pneumonia, Lister's results in the immunization of man are certainly promising, and warrant continued study. This work invites further investigation, and stimulates the hope that some prophylactic measure of a specific nature may be developed for lobar pneumonia. The practical application of such a measure would not be so difficult as before, because our knowledge of the epidemiology of pneumonia has been greatly extended in recent years.

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[1] Dochez, A. R., and Gillespie, L. J.: A Biologic Classification of Pneumococci by Means of Immunity Reactions, The Journal A. M. A., Sept. 6, 1913, p. 727.

[2] Lister: Publication of the South African Institute for Medical Research, Johannesburg, 1913.

[3] Lister: *Publication of the South African Institute for Medical Research*, Johannesburg, 1916, 8.

THE ROUTINE EXAMINATION OF THE PLACENTA

The conscientious obstetrician should exhaust every source of information regarding fetal development and should place the facts at the disposal of the physician who will supervise the care of the infant during the early years of its life. If this thesis, by Professor Slemons[1] of the Yale Medical School, be accepted without question, it may properly be inquired whether the detailed examination of the placenta is an essential or even helpful procedure — something likely to throw light now and then on either prenatal difficulties or postnatal development. The placenta represents the fetal organ for respiration, nutrition and excretion. Usually the expulsion of the placenta and decidual membranes after parturition, and a cursory examination to determine whether or not a portion has been retained, represent at the bedside the maximum concern for the placenta.

Slemons maintains that this should not be. Antenatal pathology, he remarks, as yet poorly endowed with facts, depends for its development in great part on the solution of placental problems. Even when such structural phenomena as infarcts have been satisfactorily explained, hardly a guess has been hazarded as to their underlying cause, their physiologic significance, and their relation to fetal complications. Other rudimentary facts remain obscure, and on demonstration may radically change our conception of the manner in which the placenta performs its work.

What is the justification for insistence on a careful examination of the placenta? Among 600 placentas consecutively collected by Slemons in hospital practice, in forty-one instances naked-eye examination revealed abnormalities, some of which would surely have escaped recognition in an unsystematic, cursory inspection. These findings tended to check haste, and were conducive to more thorough obstetric technic on the part of those in attendance. Slemons points out that a better understanding not only of defective but also of normal placentation proceeds from the study of abnormal cases. Accordingly, intimate investigation of placenta praevia is well repaid, and likewise the investigation of a placenta which separates too early, or one which is retained. In the event of a subsequent pregnancy, such information may serve as a guide for the proper treatment. Contrary to the teaching of the past generation, which lacked accurate means of observation, Slemons insists that it is unsafe on the gross appearance of the placenta alone to base a diagnosis of syphilis. Even the Wassermann test may be subject to aberrations. Among 260 patients on whom serologic observations were made, there were twenty-two patients suffering from albuminuria, and in fourteen the Wassermann reaction was negative. Approximately, then, in every third case there was a positive reaction. Whether or not syphilis underlies the toxemias is a question, but it seems more likely that some substance in the blood, referable to the metabolic disturbance, causes slight fixation when an examination is made according to the Wassermann technic. The chief source of confusion in the interpretation of the Wassermann test during pregnancy lies in the presence of autointoxication attended by albuminuria.

The recorded fact that one out of five or six placentas may present some departure from the normal is based on a considerable number of cases. What rules, then, should be formulated to secure appropriate information? Slemons thus summarizes his own views:

> In well-organized clinics the careful study of the placenta should be insisted on not only at the bedside but also in the laboratory. Such rigid requirements cannot be exacted of the practitioner, but if he wishes not to overlook important data he should supplement bedside observations with study of the placenta in his laboratory. It should be weighed and measured, gross abnormalities noted, fresh tissue teased, and the chorionic villi studied microscopically. These data should be recorded and thus become more reliable, if in the puerperium some complication develop which requires for its interpretation a knowledge of the placenta. When the teased villi suggest the presence of syphilis the placenta should be sent to a pathological laboratory and stained sections prepared to establish the diagnosis. Simultaneously a Wassermann test on the mother's blood should be made. Similar precaution is advisable if delivery occurs prematurely. At times a diagnosis of syphilis will be the result, but more frequently the investigation will remove all suspicion of that disease. Finally, if the infant is stillborn or dies within the first few days of extra-uterine life, study of the placenta should be comparable in painstaking care to that given the organs at an autopsy.

ACIDS AND ALKALIES IN RELATION TO DIABETES

The possible bearing of the reaction of the body fluids and tissues on the physiologic activities which proceed in the cells of the organism has recently become prominent in the discussion of many functional transformations. Not long ago, the reaction of the blood and a few characteristic secretions were grossly recorded by the color changes which they produced on one or two familiar indicators like litmus; but since the reaction in a physicochemical sense has been measured by more delicate methods of estimation, and the preponderance of hydrogen or hydroxyl ions has been more accurately determined under a variety of conditions, a remarkable regulatory efficiency of the body has been discovered. The living mechanism is apparently constituted to carry out its essential performances under fixed conditions of environment. Alterations in the latter, in the sense of change of reaction, promptly cause some regulatory response. We speak, therefore, of an acid-base equilibrium, a neutrality regulation, as a vital characteristic of the physiologic outfit.

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[1] Slemons, J. M.: The Results of a Routine Study of the Placenta, Am. Jour. Obst., 1916, 74, 204, 295.

More illustrations are being revealed from year to year. The pathology of metabolism, respiration and excretion has at length become concerned with the meaning of disturbances of reaction for bodily well-being. Acidosis and acid intoxication are expressions now frequently used. Alkalosis has recently come into vogue to express a disturbance of acid-base equilibrium in a contrary direction. The respiratory mechanism is singularly sensitive to minute changes in the hydrogen ion concentration of the blood. The kidneys are not indifferent to the reaction of the fluid which provokes them to secretion. There is an intimate, though quite different sort of relationship between the acid-producing function of the stomach and the alkali-producing activity of the pancreas. For example, the amount of pancreatic juice produced by any food appears to be proportional to the quantity of gastric juice which it calls forth. The neutralization of the acid gastric chyme by the alkaline secretions which reach the small intestine is the usual, and apparently desirable sequence in the events which make up the story of alimentary changes.

Murlin and Sweet[1] inquire what significance the regulation of intestinal alkalinity to stomach acidity may have for events beyond the alimentary wall. If, they ask, it is essential to health that gastric acidity be completely neutralized, what would be the consequence of preventing such neutralization by removal of the pancreas, considering that the pancreas, as Boldyreff shows, produces more than ten times as much alkali as appears in the bile, and twenty times as much as in the intestinal juice? Obviously hydrochloric acid might remain unneutralized in the alimentary tract, and being absorbed as such might induce phenomena characteristic of acid intoxication.

The combustion of sugar in the organism is modified in some way by the reaction of the cells or the fluids which bathe them. Acidosis accompanies those conditions in which carbohydrates fail to be burned up properly in the body. In its attempt to correct this maladjustment, compensatory amounts of acid usually are excreted in the form of acid phosphates by the kidneys; or the body neutralizes the acid with ammonia deflected from its normal metabolic channels. Acid intoxication may give rise to glycosuria. The conversion of glycogen into unburned glucose which is responsible for this may be prevented by corrective administration of alkalies. Furthermore, there is reason to believe that alkalies may actually further the metabolism of glucose by facilitating its oxidation.

The frequent, if not invariable involvement of the pancreas in human diabetes, and the familiar experimental production of glycosuria by excision of the pancreas have suggested the possibility that the consequences of pancreatectomy might be due in large measure to an acid intoxication resulting from loss of sufficient alkali-producing function.[2] The numerous incidental observations which tend to strengthen this view cannot be reviewed in detail here. The conviction that the stomach contributes in some way to the etiology of diabetes mellitus has frequently been expressed by clinical writers. The situation as regards the unneutralized gastric acid is presented thus by Murlin and Sweet:[1]

> When acid is taken from the blood by the gastric glands, the venous blood in the gastric veins must be relatively richer in hydroxyl ions. Accepting the view commonly held that the chlorin ions of hydrochloric acid are derived from sodium chlorid in the blood, there would then be a relative excess of sodium ions left behind. Normally, this disturbance as regards sodium is at once restored by the production of the sodium carbonate by the pancreas, for not only is the amount of alkali produced by the pancreas proportional to the production of acid by the stomach, but, as appears clearly in the work of Pawlow's pupils, its secretion begins as soon as the production of acid begins in the stomach. The blood from gastric and pancreatic veins, reunited in the portal, has then a normal reaction before it enters the liver. . . . When the pancreas is removed entirely we might expect also that the kidney would remove the excess of sodium ions resulting from secretion of hydrochloric acid into the stomach until this acid were again absorbed into the blood. Even if this were not the case, however, the liver would not suffer from a temporary excess of such ions (combined probably as disodium hydrogen phosphate or as sodium carbonate or with protein), for the tolerance of protoplasm for free hydroxyl ions is much greater than for free hydrogen ions. The trouble would come when the hydrochloric acid reached the duodenum.

The new hypothesis presented thus postulates that the hydrochloric acid produced in the stomach and left unneutralized in the duodenum after pancreatectomy is absorbed by the portal system and poisons the liver, causing the rapid onset of the resulting diabetes. In support of this, Murlin and Sweet[1] have observed that ligation of the pylorus at the time of pancreatectomy, an operation invariably attended with glycosuria, delays the appearance of sugar in the urine. If complete gastrectomy is performed in diabetic animals, little or no glycosuria is developed ordinarily. Furthermore, animals with the pancreas removed after gastrectomy do not exhibit the usual profound toxemia of a simple pancreatectomy.

Alkali therapy has long been practiced in connection with diabetes. The prevailing opinion has been that the alkali affects only the acidosis. Since the latter factor has been found to be controllable by dietary regulation, particularly by fasting and restriction of fats in the ration, the liberal use of alkalies in diabetes has been given up by some therapeutists. These newer observations have raised questions fraught with profound significance not only for the theory of the etiology of glycosuria but also for the clinical management of the diabetic condition.

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[1] Murlin, J. R., and Sweet, J. E.: Pancreatic Diabetes in the Dog, IV, The Influence of Pylorus Exclusion and of Gastrectomy upon the Effects of Pancreatectomy, Jour. Biol. Chem., 1916, 28, 261.

[2] Murlin, J. R.: Post-Graduate, 1914, 29, 7.

Current Comment

BIOLOGIC THERAPY IN THE WAR

War, with its immense numbers of diseased and wounded men, affords opportunity to determine the efficacy of various scientific procedures. The present, the greatest war the world has ever known, is serving as a crucible in which many biologic products are being tested. When peace returns and all of the data from the various combatant countries become available, we should know which products, if any, may be removed from the experimental list and placed among the agents of established value. According to McCoy, whose discussion of this subject appears in this issue,[1] there are five agents — vaccine virus, diphtheria antitoxin, tetanus antitoxin, antimeningococcus serum, and antityphoid vaccine — which may be regarded as indispensable in connection with conditions which prevail when large bodies of men are brought together. In addition to the agents mentioned by McCoy, that now may be regarded as necessary, there are some which at present give enough promise of value to make their use worth considering. In this country, fortunately, we are better situated than are any of the European nations, so far as facilities for producing biologic supplies are concerned. The firms manufacturing this class of medicaments can, if need be, meet the demands of our own army and civilian population, as well as those of our allies. The essential nature of the products makes their manufacture in large quantities comparatively simple. With the good sanitary conditions that we may reasonably expect to prevail in our concentration camps, the need for various agents not thoroughly tried out, such as antidysentery serum, antipneumococcus serum, and vaccines against dysentery, cholera and epidemic meningitis, should not be extensive with the possible exception of the meningococcus vaccine. Fortunately biologic products grow in a manner not applicable to munitions or, in fact, any other indispensable material of modern warfare. The supervision of biologic products by the United States Public Health Service safeguards the interests of the manufacturer and of the consumer.

THE STATUS OF ENROLMENT OF MEDICAL OFFICERS

An old proverb says not to count one's chickens before they are hatched. This principle should apply when discussing the status of recruiting for the Medical Departments of the Army and Navy. It is well to realize that simply enrolling one's name on a list or making a verbal statement to the effect that one is willing to serve with this or that unit, or unofficial organization or committee, does not qualify one to be counted as an officer of the Medical Reserve Corps. To be so counted, one must be enrolled — that is, commissioned — in the Medical Reserve Corps. To thus enroll, it is necessary first to fill out the regular application blank, such as appeared in The Journal two weeks ago; second, to have it certified to before a notary public; third, to send the application to the nearest examining board; and fourth, to pass the examination. The results then are forwarded to Washington, where the final decision is made as to whether or not the applicant is accepted. If the applicant is accepted, he receives his commission and with it the oath of allegiance, which he must sign, swear to and return to Washington. Only then can he be regarded as a member of the Medical Reserve Corps or of the Medical Corps of the Army. The time has come to face facts, to know exactly where we stand, and then only shall we know what remains to be done.

THE NEED OF MEDICAL OFFICERS

Until the last two weeks, the attempts to secure men for the medical departments of the army and navy, and for their reserve corps, were not encouraging. On the first of May there were about 4,000 members of the Reserve Corps of the Army, including approximately 3,500 of the old Reserve Corps. Some of the latter, as has been repeatedly stated, are beyond the age limit, and many have not yet intimated that they are willing to accept a commission in the new Reserve Corps. During the last two weeks, however, conditions have improved, but since not all of the applications go to the central office now, some being sent to the various examining boards, it is impossible to tell just how fast recruiting is going on. As we have already stated, if an army of 2,000,000 men is finally formed, it will mean that at least 20,000 physicians will be required. At the present time, including those in the regular Medical Corps, there are not 5,000 who are commissioned or who have been approved for commission; hence the actual need for the entire army, if and when it is completed, is 15,000 more men than are yet commissioned. There are perhaps 1,000 applications now in the various stages of progress toward acceptance or rejection of the applicant, although for the reason given above this necessarily is estimated. All in all, therefore, while there is no reason for fearing that the medical profession will not respond to the limit required by the government, at the same time considerable work and individual self-sacrifice will be necessary before the required number is obtained.

WHAT IS ADIPOCERE?

Adipocere is the product of a process that may take place when corpses are buried for some time in wet or damp localities. To the pathologist this interesting so-called corpse wax at one time possessed a special interest in that it was supposed to furnish direct evidence of the formation of fat from proteins. This conclusion has, however, long since been successfully disputed; and it has recently come to be understood that in the formation of adipocere the fat of the tissues itself takes part. Fat corpses are most likely to become the subjects of adipocere production, and the preservation of the general form of the body in the cases on record is due to the peculiar distribution of the corpse wax and the retention of the bones. The actual quantity of adipocere may not be large. Ruttan and Marshall[1] of the Department of Chemistry at McGill University, Montreal, have given a description of the composition and a tenable indication of the formation of this substance, which has been an interesting chemical puzzle since its description by Fourcroy in Paris in 1787. They feel justified in concluding that adipocere is the residue of the preexisting fats of animals. It is composed almost entirely of the insoluble saturated fatty acids left after the slow hydrolysis of the fats in wet ground. The protein matter has entirely disappeared, and the glycerol, soaps, etc., resulting from the hydrolysis have been carried away in aqueous solution.

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[1] McCoy, G. W.: Usefulness of Serums and Vaccines Under War Conditions, The Journal A. M. A., this issue, p. 1401.

MEDICAL LEAVEN IN THE ADVERTISING LUMP

A notable series of articles on honest advertising in local fields is running in the New York *Tribune.* They are by Samuel Hopkins Adams, which in itself is assurance of their readability and accuracy. In last Sunday's *Tribune,* dealing with the situation in New Orleans, Mr. Adams pointed out that in the advertising practices of a community there can be no standing still; the movement is either forward or backward. "New Orleans is on the march, facing front!" The influences which unite to keep local advertising in New Orleans on a decent basis are three, said Mr. Adams. The first is Dr. Oscar Dowling, president of the State Board of Health; the second is the New Orleans *Item,* while the third is the united endeavor on the part of the best merchants, expressed largely through the agency of the Advertising Club of that city. In speaking of Dr. Dowling's influence on the situation Mr. Adams says:

> "If one may borrow a term of lawlessness for application to a strictly legal procedure, Dr. Dowling is the 'direct actionist' in the local field. Among public health workers he has a national reputation as the foremost quack-fighter holding any official medical position in this country. The manufacturers of that dubious boon to womanhood, Wine of Cardui, have a libel suit of almost *Tribune* magnitude against him, which, however, they are not pressing to trial with any undue haste. Various other patent medicines have threatened him, and essayed to get him out of office, but without success. When the Louisiana advertising law was enacted he seized on it as a new weapon in his fight. Working in conjunction with the Shreveport Ad. Club, he arrested the Tanlac agent there. In New Orleans he swore out a warrant for the local purveyor of an outrageous fake called Vitalitas. It is an interesting fact, by the way, that the State District Attorney is not moving to bring this case to trial, though it is two and a half years since the arrest was made. While Dr. Dowling's astivities are confined to the worst and most harmful class of fake advertisers, the quacks, nevertheless his influence is potent throughout the entire field. As one of the local vigilance committee put it: 'Dowling has shown us that the law is there to be used when we need it.'"

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[1] Ruttan, R. F., and Marshall, M. J.: The Composition of Adipocere, Jour. Biol. Chem., 1917, **29**, 319.

Informing the Patient.—There is a natural hesitancy on the part of many members of the medical profession in telling patients that they have tuberculosis. This should be overcome. It is unjust to the patient; it is associated with danger to the community, and it lowers the standing of the medical profession in the community.—S. J. Deehan, M.D., *Monthly Bulletin,* Philadelphia Department of Public Health and Charities.

Medical Mobilization and the War

Application Blanks Must Be Sworn To

The surgeon-general of the army desires The Journal to announce that those contemplating making application for appointment in the Medical Reserve Corps must have the statements made on the personal history blank certified to before a Notary Public or other person authorized to administer oaths and instead of forwarding the blank to the surgeon-general's office, the applicants may communicate with the president of any of the boards heretofore published in The Journal, as these boards are authorized to make the examinations without reference to this office. This course has been taken in order to expedite the issuing of commissions and lessen the amount of correspondence going through this office. A list of these boards will be sent by The Journal on receipt of a self-addressed envelope.

Military Measures Against Venereal Diseases and Alcohol

As a measure looking toward the prevention of venereal diseases and alcoholism in the military services of the United States, the Council of National Defense has recommended that a zone under military control shall be created about every military command, within which zone prostitution will not be tolerated and the sale of alcoholic beverages to the military forces will be under the immediate control of the Army and Navy.

This action was taken on the recommendation of the General Medical Board of the Council, which advised that the Departments of War and of the Navy officially recognize that sexual continence is compatible with health and that it is the best preventive of venereal infection, but which advised further that with a view to diminishing opportunities for infection prostitution be kept as far back from all military and naval establishments as practicable. Recognizing the difficulty of procuring the enactment of the legislation necessary to permit and to require the civil authorities having control of the territory immediately outside of military establishments to afford the necessary protection to the soldiers, sailors and marines on duty there, and recognizing the necessity for such protection, the General Medical Board urged that zones of safety be established under the control of the military forces, as a war measure. The prohibition of the sale of alcoholic beverages to sailors, soldiers and marines within the prescribed zone, and of the use of these beverages by these men within those limits, was advised primarily because of the intimate relation between prostitution and the use of such beverages.

With a view to diminishing the temptation to which men are subjected when confined for considerable periods of time in camps and other similar establishments, away from the restraining influences of domestic and ordinary social life, the General Medical Board recommended that provision be made for suitable recreational facilities. This part of the program has been seriously taken up by the War Department, which has created a Commission on Camp Activities, under the chairmanship of Mr. Raymond B. Forsdick of New York. It is the purpose of this commission to provide facilities for recreation and entertainment, to encourage wholesome sports and athletic games, to promote athletic contests, and generally to provide for the most wholesome relations between the military and the civil populations.

In view of the magnitude and gravity of the danger of venereal diseases, not only to the military forces in active service but also to the civil population on the return of such forces to their ordinary places in society at the close of the war, or when discharged because of disability, the General Medical Board has recommended that a special division be created in the medical department of the Army and in the medical department of the Navy, for the control of venereal infections. A careful study is now being made to see whether such a scheme can be satisfactorily fitted into the existing medical organizations, and if so, how best to accomplish that end.

Medical Students and Conscription

A medical student writes: "Can you give me any information as to whether or not a medical student who intends to finish his medical work as soon as possible will be subject to draft for service before he has completed his course, providing he will offer his services as soon as he finishes his course of study? Without any such assurances the medical student will be in a most uncertain position and might better enter one of the Officers' Training Camps and make his education and training be of more value than in the line as a regular. . . . I am registered to enter Harvard Medical School as a junior this next fall and am desirous of learning my status as a subject to draft under these conditions." The General Medical Board of the Council of National Defense has urged that medical students, and college students preparing to enter medicine, do not enlist but continue in college until they graduate, since the greater need of the country is for their trained service. It was recommended—although no action has been taken—that such men should wear some insignia to show that they were not "slackers." The General Medical Board took this action specifically because it was realized that many young men would be placed in the same position as our correspondent. The board desired also to avoid the error made in England by which the normal supply of men entering the profession each year was not maintained. Undoubtedly, when the law for selective conscription is put into effect, such students will be specifically exempted.

The Medical Services in the Somme Advance

In the *British Medical Journal,* April 14, several points of immediate medical military interest were brought out in the recent advance in the region of the Somme. It was found necessary, of course, to shift many medical units, including the casualty clearing stations. These units had occupied their stations during the winter. The shift involved a great deal of work and threw new light on the relative importance of horse drawn and motor propelled vehicles. Since the coming of the automobile ambulance and hospital wagon it has been suggested that horse drawn vehicles be abandoned entirely. It was found, however, that a certain number of horse drawn vehicles in each field ambulance was of the utmost importance. The ground was so much cut up by shell fire and by traffic after the frost in addition to intentional obstructions which had been created that there was a broad stretch of country which could not be traversed even by those ambulances created out of the smallest (Ford) cars. The horse ambulances were able to go ahead freely and easily. It was therefore arranged that the horse ambulances should bring the cases back to the place where the totally impassable parts of the road commenced. At these places squads of stretcher bearers took the patients from the field ambulances and carried them until they reached the automobile vehicles. At times these "carries" extended for several miles. Owing to the character of the ground and the scattered nature of the fighting, it was necessary to collect the wounded by day instead of by night, but fortunately the casualties in the medical department were not exceedingly numerous.

The Shortage of Physicians in England

In discussing the Somme advance before the House of Lords the question arose as to whether it would be possible to give the benefit of a special medical board to those who might wish to be examined by it. Lord Derby said that this had been found impossible. It would mean that practically every one who did not want to serve would see a possible loophole for escape and would appeal to the board. It was not possible to form numerous boards all over the country for the simple reason that there were not at the present moment in England physicians enough for all the work which the War Office had to put on them. Lord Derby stated that the country should know, too, that whereas some people thought that the work of the Royal Army Medical Department was without any danger, more than 400 physicians had been killed and wounded in the Somme battle line. "We are," said Lord Derby, "I will not say critically short, but certainly lamentably short of doctors for all the work which we have for them at the present time, and, I am afraid, in the immediate future."

Young Men Needed for Hospital Corps

Young men who desire to enter the hospital corps of the navy should enlist at once as vacancies are being rapidly filled. This service is particularly inviting to the recruit who selects the navy for his life work as he receives careful training under medical direction and in congenial surroundings, the pay is good and promotion rapid. The recruit who enlists for a stated period receives training which will be of value to him in his civil life. Send the young men of your acquaintance who are interested in this phase of military work to the nearest naval recruiting office. Instruct them to speak to the physician on duty there.

The Duty of Members of the Old Reserve Corps

There are a large number of members of the old Reserve Corps who have not notified the surgeon-general's office as to whether or not they wish to be transferred and commissioned in the new Medical Reserve Corps. The members of the old Reserve Corps should act now, not wait until June 3—the date on which the old Medical Reserve Corps becomes obsolete—so that their status may be known.

War Budget for the Medical Department.—In the first appropriation bill in the war budget which was sent April 30 there is an item of $23,780,000 for the Medical Department of the army, and $7,300,000 for additional equipment expense for the Bureau of Medicine and Surgery of the Navy.

Young Physicians Pass Tests for Navy.—A competitive examination was held at Fordham University, April 17, for appointments to the medical division of the United States Navy, as a result of which seventeen young physicians will enter the federal service, June 1, with the rank of junior lieutenant. Of these, eight were from Fordham, four from Yale, four from Cornell, and one from Columbia.

Forward Blanks to Examining Boards.—To relieve the surgeon-general's office, examining boards have been created in various parts of the country for the purpose of examining applicants for the Medical Officers' Reserve Corps. Applicants for appointment to this corps should send their personal application blanks, when filled out and certified, to the nearest board. These boards were listed in The Journal for April 28, page 1267, and May 5, page 1330. A list of these boards will be sent on application to The Journal.

Universities and Colleges Supply Ambulance Companies.—The American Red Cross which is organizing and training ambulance companies throughout the country is placing especial emphasis on the formation of these units at the colleges and universities, as these groups can be most conveniently assembled and most effectively trained. This service will probably be the first sent to the European battle fields, and is therefore particularly attractive.

Bureau of Standards to Examine Blood Counting Apparatus.—The Bureau of Standards of the Department of Commerce has drawn up specifications for blood counting chambers and dilution pipets. A tentative schedule of fees for examination of such apparatus has been decided on, namely, $1.50 each for counter chambers and 35 cents for each interval of the pipet tested. As at least two intervals on each pipet will be tested, the minimum charge will be 70 cents.

New Military Hospital.—On account of sickness and accidents among guardsmen now stationed on duty, a new hospital has been fitted out at Fort McHenry, Baltimore. A compartment for the housing of sick soldiers has been erected, with separate quarters for examination. A quarantine has also been established. Major Herbert C. Blake has been appointed district superintendent of the hospital, with Dr. William J. Coleman, of the University of Maryland staff, as assistant superintendent.

The English Red Cross in Italy.—The *Riforma Medica* of Naples relates that the equipment for two more hospitals has arrived in Italy sent by the English Red Cross. One with 300 beds is being set up at Gradisca, the other, with 150 beds, at Castelletto. This supplements their other units scattered through the Trentino, Carnia and Carso, including one equipped for Roentgen work. Our exchange adds that the English Red Cross has thus cared for 180,000 wounded and sick soldiers and taken 4,000 radiographs.

Physicians Favor Prohibition During War.—At the meeting of the American Society for Clinical Investigation held in Atlantic City, May 1, under the presidency of Dr. Haven Emerson, health commissioner of New York City, a resolution was adopted recommending that the manufacture of alcoholic beverages and their importation to the United States be prohibited for the duration of the war and for at least one year thereafter. This action was based solely on medical grounds as it was felt that the present time affords an unprecedented opportunity for inaugurating a convincing demonstration as to the value of abstinence from alcoholic beverages.

War Fund of Rockefeller Institute.—The Rockefeller Foundation announced, May 3, that it had appropriated $475,000 to be spent in the United States for medical research and maintainage as the beginning of war work; $400,000 for the continuance of the relief activities now being carried on abroad; $200,000 to the Rockefeller Institute for Medical Research for the equipment of the Carrel Hospital, and $60,000 to the Rockefeller Institute, for the instruction of surgeons in new methods of diagnosis, for the preparation of serums, and to find improved means for treating peritonitis and shock.

Bill to Abrogate the Patent on Salvarsan.—H. R. 4190 was introduced in the House of Representatives on May 4, 1917, by Congressman Emerson of Ohio. It was referred to the Committee on Patents and ordered to be printed. Following is the text of the bill:

> To abrogate the patent upon the article known as salvarsan.
>
> Whereas, The use of salvarsan is now necessary to the medical profession and the output of the article is so handicapped because of certain patent rights; therefore
>
> Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the patent rights issued upon the article known as salvarsan is hereby abrogated and set aside and declared null and void.

Orthopedic Surgeons Sail for England.—The following orthopedic surgeons will sail for England about May 15. They will go under the leadership of Joel E. Goldthwaite of Boston and will serve in English hospitals under the direction of Col. Robert Jones: Carlton R. Metcalf, Concord, N. H.; William G. Erving, Washington, D. C.; Roy Abbott, San Francisco; A. R. McCausland, Boston; De Forest P. Willard, Philadelphia; H. W. Orr, Lincoln, Neb.; Sydney M. Cone, Birmingham, Ala.; Mitchell Langworthy, Chicago; Murray Danforth, Providence, R. I.; Charles F. Eikenbary, Spokane, Wash.; Walter I. Baldwin, San Francisco; H. A. Durham, New York; James C. Graves, Jr., Spokane, Wash.; Roades Fayerweather, Baltimore; F. C. Kidner, Detroit; L. C. Spencer, Baltimore.

Ambulance Notes.—Christ Episcopal Church, Waukegan, Ill., has purchased and will maintain an ambulance for service in France, which will be known as the Chicago Diocese Ambulance, and will be driven by the son of Bishop Anderson. ——A unit of the University of California Ambulance Corps passed through Chicago, May 6, en route to France.——There sailed from an Atlantic port, April 5, twenty-three ambulances, drivers from Chicago, and on the same ship were six ambulances donated by the people and organizations of the city.——The children of Mr. and Mrs. Charles A. Plamondon, Chicago, announced on May 7 the gift of an ambulance for service on the western front, which will be known as the Charles Mary Plamondon Ambulance, and is given in memory of the parents of the donors, who were drowned at the sinking of the *Lusitania*.——Section 17 of the American Field Ambulance has left for the French front, May 5. The personnel of the section is composed of university men from Chicago, Wisconsin, Cornell and other institutions.

Federal Aid for Rural Sanitation Recommended.—The Conference of State and Provincial Boards of Health, which met in Washington, D. C., on April 30 and May 1, adopted a resolution under which an effort will be made to procure the enactment of federal legislation for the protection and promotion of the health of rural communities along the lines that have been adopted to stimulate agriculture, to promote the building of good roads, and to encourage vocational education. It is proposed that Congress make appropriations from time to time for health work in rural districts, to be apportioned among the states and territories in proportion to their respective populations, the allotment to a state or territory to become available only to the extent of state or territorial appropriations for like purpose, and to be used only for the execution of projects approved by the United States Public Health Service.

Standardization of Biological Products.—The official Conference of State and Territorial Health Officers with the United States Public Health Service, which met in Washington, D. C., on April 30, adopted a resolution recommending that the service named establish and promulgate standards as to potency with reference to all biologic products, vaccines and serums, not only with relation to diphtheria and tetanus antitoxin but especially with relation to antimeningococcus and pneumonia serums and vaccines for typhoid fever, paratyphoid fever and bacillary dysentery. The resolution was based on a report to the conference that all of the antimeningococcus serum in an entire state was found at one time last year to be worthless, and that much of such serum sent to France and England in the early days of the war had given unsatisfactory results, which had disappeared only after the Rockefeller Institute had inquired into the methods of manufacture used by those who had supplied such serum and had provided a proper supply. Antityphoid vaccine, it was reported, had also been found to be bad.

Base Hospital Units Sail.—Lakeside Base Hospital No. 4, Cleveland, sailed, May 8, for immediate service abroad. The unit will be under command of Major H. L. Gilchrist. Its commissioned personnel is as follows:

George W. Crile, 1921 Prospect Avenue, director; William E. Lower, 1921 Prospect Avenue, assistant director, surgical section; Charles F. Hoover, 700 Rose Building, assistant director, medical section; Howard T. Karsner, Lakeside Hospital, assistant director, laboratory section.

Henry L. Sanford, 1021 Prospect Avenue, staff surgeon; Harry G. Sloan 1021 Prospect Avenue, staff surgeon; Thomas P. Shupe, 1021 Prospect Avenue, staff surgeon; Walter B. Rogers, Lakeside Hospital, staff surgeon; Charles A. Bowers, Lakeside Hospital, staff surgeon; Allen Graham, Lakeside Hospital, staff surgeon; Gordon N. Morrill, 2047 East Ninth Street, orthopedist; William E. Bruner, 13380 Euclid Avenue, ophthalmologist; Chester D. Christie, Lakeside Hospital, staff physician; Richard Dexter, 815 Rose Building, staff physician; Herbert V. Weibranch, Lakeside Hospital, staff physician; Harry V. Paryzek, Lakeside Hospital, staff physician; Marion A. Blankenhorn, Lakeside Hospital, staff physician; Charles W. Stone, 602 Rose Building, neurologist; Harry Roswell Wahl, Lakeside Hospital, bacteriologist; Walter C. Hill, University Club, roentgenologist; William R. Barney, Lakeside Hospital, adjutant; John F. Stephan, 1404 New England Building, dentist; Bertram S. Rothwell, 430 Rose Building, dentist; Leroy B. Sherry, Lakeside Hospital, registrar; Andrew R. Warner, Lakeside Hospital, quartermaster.

The Harvard Medical School Unit, officially known as Red Cross Base Hospital No. 5, sailed, May 11, for France. It is under command of Major R. W. Patterson. The commissioned personnel of the unit is as follows:

Dr. Harvey Cushing, director; Dr. David Cheever, assistant director (surgical); Dr. Roger I. Lee, assistant director (medical); Dr. Richard P. Strong, assistant director (laboratory); Dr. Louis H. Burlingham, adjutant; Dr. William H. Potter, dental surgeon; Dr. Walter B. Cannon, laboratory section; Dr. George S. Derby, ophthalmologist; Dr. Robert S. Osgood, orthopedist; Dr. Percy Brown, roentgenologist; Drs. Walter M. Boothby, Edward B. Towne, Gilbert Horrax, Samuel C. Harvey, Thomas R. Goethals, staff surgeons; Dr. James L. Stoddard, bacteriologist; Drs. Reginald Fitz, George P. Denny, George R. Minot, Oswald H. Robertson, Henry Lyman, staff physicians; Dr. William S. McCann, registrar; Capt. Augustus G. Reynolds, quartermaster; Dr. Jacob B. Bruce, assistant quartermaster.

Special Regulations on Designation of Medical Section, Officers Reserve Corps.—By special regulations for Officers Reserve Corps No. 43, the general designation "Medical Section, Officers Reserve Corps" is changed to "Medical Department, Officers Reserve Corps," with subsections as follows: (a) Medical Reserve Corps. (b) Dental Reserve Corps. (c) Veterinary Reserve Corps. The official title should be similar to the following: Major (Captain or First Lieutenant) John Doe, Medical Reserve Corps, U. S. Army.

Instructions to Medical Officers of the Officers' Reserve Corps.—Under date of May 4, the surgeon-general's office issued Circular 18 to all medical officers of the Officers' Reserve Corps. The circular stated:

1. It is contemplated that you will shortly be ordered to active military duty.

2. You should, therefore, at once provide yourself at your own expense, with the following articles of uniform, so as to be in readiness to obey orders. The following is a minimum that you should have at once. They can be purchased from the Quartermaster's Department at the nearest post, or you can get them from private dealers: 1 hat, service; 2 breeches, service O. D.; 1 coat, service O. D.; 1 leggings, leather, officer's; 2 pairs shoes, russet; 2 shirts, woolen, O. D.; 1 sweater, army; 1 slicker, saddle.

The following must be purchased from private dealers in military uniforms and equipments: 1 hat cord, officer's; collar insignia and insignia of rank; 1 note book, pocket, manifolding; 1 compass, 1 watch.

You may use your own underclothing, socks, handkerchiefs, and toilet articles. Additional articles to the above list can be purchased later.

3. Provide yourself with 1 bedding roll, 2 army blankets, 1 sleeping pad (or two comforters); 1 mosquito bar, cot; 1 canvas basin, 1 canvas bucket, 1 collapsible candle lantern; 1 folding canvas cot; 1 folding camp chair. These are sold by private dealers. If possible, provide yourself with a trunk locker, army pattern, sold by the Quartermaster's Department or private dealers.

4. Your necessary mess equipment includes: 1 canteen, cavalry; 1 canteen strap, cavalry; 1 cup; 1 knife; 1 fork; 1 spoon; 1 meat can.

You can purchase these from the Ordnance Officer at the nearest military post; or write to the Commanding Officer, Rock Island Arsenal, Rock Island, Ill., for the necessary vouchers and costs. Private dealers also sell them.

5. The horse equipment, including spurs, which you will need, can be drawn without cost from the Ordnance Department on memorandum receipt, on joining your first station.

6. The shelter tent halves, poles and pins you will need can be drawn from the Quartermaster's Department on memorandum receipt at your first station.

7. If the Government calls you out, it needs your services at once. Promptly obey your order to report for duty on its receipt. Only the War Department can authorize delay.

8. Buy your own ticket from your home to your station. You will later be reimbursed at the rate of 7 cents per mile if traveling without troops. If there is an army quartermaster in the vicinity, see him, for there are a few land grant railroads over which the Government issues transportation without cost to you, and over which you accordingly draw but 4 cents per mile in mileage.

9. Ship your bedding roll with your baggage on your ticket.

10. On arrival at your station, report yourself in uniform, to the commanding officer for duty.

11. He, or an assistant, will see that you are provided with quarters, and inform you how to arrange for messing facilities.

12. The Government provides you with fuel and lights gratis.

13. You are paid monthly on special vouchers, in amount corresponding to your grade and length of service.

14. If you have rank below that of major and own your own horse, which must come up to certain Government standards as to age, size and soundness, you will be paid $150 yearly in addition to your pay, $200 if there are two horses. Forage and stabling for the same are furnished you without cost.

15. In anticipation of your orders, at once start systematically to familiarize yourself with the contents of any official manuals, regulations, or books of reference on medico-military matters which you may have.

16. For further information, secure the advice of any medical, or other officer, of the Army or National Guard in your vicinity.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

CALIFORNIA

Personal.—Dr. H. George Crease, Bakersfield, fell into an open cellar way, April 24, sustaining severe injuries to his head and chest.——Dr. Joseph R. Cornell, Sterling City, has been appointed district surgeon of the Southern Pacific system with headquarters at San Francisco.

Adopts Quarter System.—Leland Stanford Junior University School of Medicine has adopted the quarter system, to begin Oct. 1, 1917. By the adoption of this system the school has a continuous session, any three quarters constituting a college year. The quarter system has been in effect at the Rush Medical College, Chicago, since 1899.

Psychopathic Hospital Advocated.—Dr. Elmer E. Southard, Boston, addressed a number of the local profession at the St. Francis Hospital, San Francisco, recently, and in his address made a strong plea for the establishment of a psychopathic hospital to care for persons of subnormal mentality and alcoholic and drug addicts.

Medical Building Dedicated.—Physicians and dentists of the Santa Clara Valley assembled at San Jose, April 20 and 21, for joint clinical and dedication ceremonies held by the Santa Clara Medical Society and Santa Clara Valley District Dental Association at their new quarters in the Toohy Building. The program included, in addition to the dedicatory exercises, a scientific program and medical and dental clinics.

New Officers of State Society.—At the annual meeting of the Medical Society of the State of California, held in San Diego, April 17 to 19, under the presidency of Dr. George H. Kress, Los Angeles, the following officers were elected: president, Dr. John H. Barbet, San Francisco; vice presidents, Drs. William W. Richardson, Los Angeles, and Morton R. Gibbons, San Francisco; secretary-treasurer, Dr. Saxton T. Pope, San Francisco; councilor of the fifth district, Dr. J. E. Phillips, Santa Cruz, and councilors at large, Drs. George H. Kress, Los Angeles; Gayle G. Moseley, Redlands, and John C. Yates, San Diego. Del Monte was selected as the meeting place for 1918. The society adopted resolutions instructing the various component societies to make surveys of their members to ascertain how many are available to the United States government in case of war. The society also went on record as opposing the bill before the legislature favoring compulsory health insurance. It was decided to redistrict the state so as to add three councilor districts.

CONNECTICUT

Dairy Product Specialist Dies.—Herbert William Conn, Ph.D., Middletown, Conn., eminent as a bacteriologist and biologist, died, April 18. Dr. Conn was born, Jan. 10, 1859, in Fitchburg, Mass., was a graduate of Boston University, in 1881, receiving the degree of A.B. and A.M. In 1884 he became a member of the faculty of Wesleyan University, Middletown, Conn., as instructor of biology. After two years he was made assistant professor and in 1889 professor of biology. He organized the state board of health laboratory in 1905 and continued as its director until the time of his death. In 1911 he was appointed a member of the National Commission on Milk Standards, and from that time on gave freely of his time and talents to this work. For the last five years of his life he devoted himself especially to bacteriology and dairy products, including standardization of milk, in order to prevent the unnecessary infant mortality. He was one of the directors of the American Public Health Association, was president of the American Society of Bacteriologists in 1902, and was affiliated with many other scientific organizations. He was a man of sterling character, a prominent health worker and a scientist of national repute.

FLORIDA

New Hospital.—Ground has been broken for the Orange General Hospital, Orlando, and the building will be completed in October.

Warning.—A number of Florida physicians have been victimized by a young man, who gives his name as Dr. R. S. Deaver, and claims to be the son of Dr. Deaver of Philadelphia. He gives a story of being detained by the breakdown of his automobile and pays bills with forged checks, receiving the balance in cash.

GEORGIA

Hospital for Savannah.—The campaign held in Savannah last month to secure funds for the Savannah hospital brought in $40,573 at hand and pledges for large additional amounts.

Health Officers Hold Meeting.—At the annual meeting of the state, county and municipal health officers' association held in Augusta, April 17, the following officers were elected: president, Dr. Olin H. Weaver, Macon; vice president, Dr. Lorick T. Pattillo, Atlanta, and secretary-treasurer, Dr. Clarence B. Greer, Atlanta. The association by resolution endorsed universal military training.

Memorial Tablets for Macon Physicians.—The city council of Macon, at a meeting April 24, requested the members of the hospital commission to commemorate the deaths of Drs. William F. Holt and Henry McHatton, the original founders of the Macon Hospital, by placing within the walls of the hospital building tablets commemorating the deaths and achievements of these distinguished physicians.

State Association Meeting.—The sixty-eighth annual meeting of the Medical Association of Georgia was held at Augusta, April 18 to 20, under the presidency of Dr. Jarvis G. Dean, Dawson. Savannah was selected as the next place of meeting and the following officers were elected: president, Dr. Eugene E. Murphey, Augusta; vice presidents, Drs. Arthur D. Little, Thomasville, and Elmore C. Thrash, Atlanta; councilors; first district, Dr. M. J. Mooney, third district; Dr. Virgil O. Harvard, Arabia; fourth district, Dr. Henry W. Terrell, Grange; all reelected, and second district, Dr. C. Kosciusko Sharp, Arlington, to succeed Dr. Arthur D. Little, elected first vice president; delegates to the American Medical Association, Dr. Mallie A. Clark, Macon, and alternate, Dr. Allen H. Bunce, Atlanta.

INDIANA

Resolutions on the Shortage of Salvarsan.—At a meeting of the Indianapolis Medical Society, April 24, 1917, resolutions were adopted similar to those adopted by the Chicago medical and St. Louis medical societies on the subject of the shortage of salvarsan.

KANSAS

Communicable Diseases.—Dr. John J. Sippy, epidemiologist of the state board of health, reports that 13,836 cases of measles were reported in the state in 1916, and 6,162 in March, 1917.——Smallpox is reported to be prevalent at Little River.

New District Society Officers.—At the annual meeting of the Seventh Kansas District Medical Society held in Hutchinson, April 26, the following officers were elected: president, Cornelius A. Mann, Hutchinson; vice presidents, Dr. Floyd E. Wallace, Chase, and Marion Trueheart, Sterling, and secretary-treasurer, Dr. William F. Schoor, Hutchinson.

LOUISIANA

Tuberculosis Survey.—Squads for the survey of tuberculosis in New Orleans were organized, April 24, at a meeting of the Louisiana Anti-Tuberculosis Campaign Committee. The object of this survey is to list all patients suffering from tuberculosis and to arrange for the safeguarding of those associated with these patients.

State Surgeons' Association Elects.—At the annual meeting of the Louisiana State Surgeons' Association held at Alexandria, April 17, the following officers were elected: president, Dr. James J. Robert, Baton Rouge; vice presidents, Drs. James A. White, Alexandria; Emil Regard, Mansura, and Hollie B. Wilson, Vicksburg, Miss.; secretary, Dr. Charles F. Duchen, Baton Rouge; treasurer, Dr. John Tolson, Lafayette. New Orleans was selected as the next place of meeting.

State Society Meeting.—At the thirty-eighth annual meeting of the Louisiana State Medical Society held under the presidency of Dr. William H. Seemann, New Orleans, at Alexandria, April 17 to 19, the following officers were elected: president, Dr. Clarence Pierson, Jackson; vice presidents, Drs. Charles V. Unsworth, New Orleans; Leon J. Menville, Couma; Archibald B. Nelson, Shreveport, and Edmund L. Leckert, New Orleans; secretary-treasurer, Dr. Laurence R. DeBuys, New Orleans (reelected).

MARYLAND

Outbreak of Cerebrospinal Meningitis.—An outbreak of *cerebrospinal meningitis* has occurred at Sparrows Point, Baltimore County. Three children suffering from the malady have been taken to the Harriet Lane Home, Johns Hopkins Hospital, and every precaution is being taken to prevent the spread of the disease. Dr. Josiah S. Bowen of Mount Washington, representing the state board of health, is cooperating with the physicians at Sparrows Point to keep a strict quarantine and prohibit the spread of the epidemic. One death has resulted so far.

Milk Pasteurization Ordinance to Be Effective.—The milk pasteurization ordinance has been favorably passed on by the Baltimore City Council and will be signed by the mayor, but will not become effective until the autumn, the committee having recommended that it take effect five months after its passage, in order to give dealers ample time in which to equip themselves with pasteurizing plants satisfactory to the commissioner of health and to comply with regulations. The premises and equipment of dairies are to be inspected before permits for the sale of milk are issued, and medical examinations are provided for employees who handle milk. Cows are to be inspected annually and all possible safeguards thrown around the sale of milk or cream for food consumption. Labels on containers will show the character of the milk and the date on which it was pasteurized or bottled.

Animals to Be Turned Over to Hospitals.—By a decision of the Board of Awards, the Society for the Prevention of Cruelty to Animals is no longer the official agent for the city in catching and disposing of stray dogs. The city solicitor, in his opinion, said that the most humane way of disposing of stray dogs would be to sell them to the Johns Hopkins or any other hospital for vivisection purposes and if necessary to have the city council amend the present ordinance, clearly and distinctly to permit of this manner of disposition. The new contractors are also obliged to dispose of stray and sick cats. Dr. William C. Gorgas, surgeon general of the U. S. Army, and Dr. Rupert Blue, surgeon general of the U. S. Public Health Service, have written the mayor explaining the necessity of the municipal authorities in cooperating with the hospitals in an effort to obtain animals for scientific research work.

Meetings.—A special meeting of the Baltimore City Medical Society was held in Osler Hall, May 4, at which time a symposium on "Health Preparedness" was held. The principal address was made by Dr. T. W. Sears, state sanitary supervisor of New York State, and was entitled, "Some Methods of Conserving the National Health." The discussion was opened by Dr. William H. Welch of Baltimore.

Another of a series of public health lectures, under the auspices of the Medical and Chirurgical Faculty of Maryland, was held in cooperation with the Laennec Society of the [illegible] 20, in Osler Hall, Baltimore. John

The topic under discussion was tuberculosis in its various phases. Dr. Horace John Howk of Mount McGregor, N. Y., spoke on "The Public Health Work of a Great Life Insurance Company," and "The Social Service Side of Tuberculosis Work in New York City" formed the topic of a paper read by Dr. James Alexander Miller of New York. Dr. J. Hall Pleasants acted as chairman, and Dr. Louis V. Hamman presided.

Personal.—Dr. William F. Twigg of Cumberland and Dr. Robert A. Webb, Jr., of Louisville, Ky., who were graduated from Johns Hopkins Hospital on April 28, have left for New York to join an American unit of physicians for service "somewhere in France." The two physicians will be assigned for the present to the British forces and will have the rank of lieutenant. In the event that troops from this country are sent abroad, they are to be assigned to American camps.——Dr. Lewellys F. Barker has offered the use of his home, 1035 North Calvert Street, Baltimore, to the surgical dressing committee of the Maryland Branch of the American Red Cross. The committee will meet here daily until its permanent quarters in the biological laboratory of the Johns Hopkins University have been made ready.——Dr. James A. Nydegger, surgeon in the United States Public Health Service, has been reassigned to the port of Baltimore for four more years.——Dr. Edward V. Milholland of Baltimore has been appointed chief medical examiner of the Baltimore & Ohio Railroad to succeed Dr. Joseph F. Tearney, who has retired on account of ill health.——Dr. John W. Sanderson of Baltimore is at the Maryland General Hospital suffering from a fractured skull as the result of a fall down the stairs at his home, when he arose to answer a sick call.

MASSACHUSETTS

Tuberculosis War Victims Fund.—Mr. Richard Hale, Boston, treasurer of the French Tuberculosis War Victims Fund, acknowledges receipt of $13,537.04 for the fund.

Antituberculosis League Meeting.—At the third annual meeting of the Massachusetts Antituberculosis League held in Boston, April 11, Dr. Vincent Y. Bowditch, Boston, was elected president.

Workman's Compensation Act.—The governor has allowed to become law, without his signature, the bill permitting injured workmen in certain institutions under the provision of the Workman's Compensation Act to select their own physician for treatment.

Diphtheria at Immigrant Station.—Three positive cases of diphtheria have been discovered in the immigrant station of Long Wharf, Boston, and 238 immigrants were quarantined in the detention quarters. The disease was apparently brought by the steamer *Cretic*, recently arrived from Mediterranean ports and the Azores.

The Infantile Paralysis Fight.—The Harvard Infantile Paralysis Commission in cooperation with the state health department is proposing to raise $150,000 for the work of the commission. The hospitals of Boston are cooperating in this work and the equipment of the Harvard Medical School laboratories is offered for the preparation of serums. Dr. Robert W. Lovett, Boston, is chairman of the commission.

Personal.—Dr. Joel E. Goldthwait, Boston, delivered an address before the New York Academy of Medicine, May 2, on "The Challenge Which the Chronic Patient Presents to Our Profession."——Dr. Homer Z. Leach, Hardwick, has been appointed assistant medical examiner (coroner) for the Tenth Worcester District.——Dr. Francis H. Slack, Boston, deputy commissioner of health of the bacteriologic laboratory, has resigned to accept the position as pathologist, bacteriologist and serologist in the Sias Laboratory, Brookline, which is connected with the Brooks Hospital.——Dr. David D. Brough has been appointed deputy health commissioner of Boston, to succeed the late Dr. Thomas B. Shea.——Dr. William R. Ohler has been appointed assistant in the clinical pathologic department of the Boston City Hospital, succeeding Dr. Charles L. Overlander, who has accepted a position in Cincinnati.——Dr. Charles C. Farnham, Randolph, librarian of the Turner Public Library since 1876, has resigned.

NEBRASKA

Dr. Orr to Do Orthopedic Surgery in English War Hospitals.—Dr. H. Winnett Orr has accepted the call for orthopedic service in the war hospitals of England. He will go as a member of the group to be headed by Dr. Goldthwait of Boston.

NEW YORK

Mohansic Bills Defeated.—The three bills of Senator Wahner aimed to prevent the further construction of the Mohansic State Hospital and the State Training School for Boys at Yorktown, with the view of preventing the pollution of the Croton watershed, have been defeated. A resolution has already passed the house declaring it to be the sense of the legislature that these institutions should not be located on the watershed and providing a joint legislative committee to report to the next legislature whether the two sites were available for other state purposes or to suggest a proper disposition of them.

Psychiatrists Discuss Activities of Clinical Psychologists.—A committee of the New York Psychiatrical Society appointed, Dec. 6, 1916, to inquire into the activities of the "clinical psychologists" in relation to the diagnosis and treatment of abnormal conditions, has just rendered its report. The committee, consisting of Drs. Charles L. Dana, Adolf Meyer and Thomas W. Salmon, makes the following specific recommendations:

> 1. We recommend that the New York Psychiatrical Society affirm the general principle that the sick, whether in mind or body, should be cared for only by those with medical training who are authorized by the State to assume the responsibility of diagnosis and treatment.
>
> 2. We recommend that the Society express its disapproval and urge upon thoughtful psychologists and the medical profession in general an expression of disapproval of the application of psychology to responsible clinical work except when made by or under the direct supervision of physicians qualified to deal with abnormal mental conditions.
>
> 3. We recommend that the Society disapprove of psychologists (or of those who claim to be psychologists as a result of their ability to apply any set of psychological tests) undertaking to pass judgment upon the mental condition of sick, defective or otherwise abnormal persons when such findings involve questions of diagnosis, or affect the future care and career of such persons.

New York City

Personal.—Dr. Maximilian Frick, who has been doing hospital work in Germany, has returned to this country.——Dr. Alfred G. Langmann was seriously injured when a New York Hospital ambulance, in which he was bringing a patient to the hospital, was struck by an automobile and overturned.——Dr. Elmer E. Larkin of Plattsburg, N. Y., has been appointed a member of the state parole board to succeed ex-Senator William Townsend.

OKLAHOMA

Money Raised for Hospital.—In the first three days of a campaign recently inaugurated in Tulsa to raise $250,000 for a new hospital for the Sisters of the Sorrowful Mother, $125,000 was subscribed.

Northeast Physicians Hold Meeting.—The annual meeting of the Northeast Physicians' Medical Society held in the State Hospital Vinita, April 19, Dr. Frank L. Hughson, Vinita, was elected president and Dr. Ralph V. Smith, Tulsa, Okla., was reelected secretary. Tulsa was selected as the place of meeting for October.

Medical Smoker.—The members of the faculty of the University School of Medicine, Oklahoma City, and students from Norman and Oklahoma City, held a smoker in the latter place, recently, in celebration of the appropriation of $200,000 by the legislature for a state hospital. Addresses were made by Dean LeRoy Long and other members of the faculty, and by Dr. John W. Duke, Guthrie, state health commissioner.

PENNSYLVANIA

Philadelphia

Personal.—Dr. James Tyson, who has retired from practice after fifty-four years of active work, was the guest of honor at a testimonial dinner, May 11, at the Bellevue-Stratford.

Philadelphia Women of New York Endow Beds.—Word has been received by Mrs. Rudolph Blankenburg that the women of the Pennsylvania society in New York City will take $12,000 from its treasury and endow two beds in the American Field Ambulance Hospital in Paris. Following Mrs. Blankenburg's suggestion, the beds will be named for Hannah Penn and Lucretia Mott.

Montgomery Leaves Jefferson.—On May 3, Dr. Edward E. Montgomery, for twenty-five years the professor of gynecology in Jefferson Medical College, delivered his last lecture in that institution. This was carrying out his determination to retire at the end of this college year. Besides the senior class, many doctors, former pupils of Dr. Montgomery, were present and flowers were presented to him in behalf of the Class of 1917 by its president.

Hospital Roof Garden Dedicated.—Dedication exercises for the new roof garden of the Samaritan Hospital were held in the building, Broad and Ontario streets, May 3. The garden is the gift of an anonymous woman donor and was presented by Charles E. Beury and accepted by Rev. Russell H. Conwell. The roof garden was given in memory of the donor's husband. It will be used for pneumonia patients particularly. It is 40 by 80 feet square and is of brick with red tile floor. It is fireproof throughout and is partly covered. The cost was $8,000.

SOUTH CAROLINA

Bond Issue Voted.—The city of Greenville has recently voted a bond issue of $100,000, the proceeds to be applied to the increase of the capacity and equipment of the Greenville City Hospital.

State Society Meeting.—At the sixty-ninth annual meeting of the South Carolina Medical Association held in Spartanburg, April 17 to 19, under the presidency of Dr. Currans B. Earle, Greenville, the following officers were elected; president, Dr. Frank H. McLeod, Florence; vice presidents, Drs. Kenneth M. Lynch, Charleston; L. Rosa H. Gantt, Spartanburg, and Pettis G. Ellesor, Newberry; secretary-treasurer, Dr. Edgar A. Hines, Seneca (reelected). Aiken was chosen as the next place of meeting.

State Association Meeting.—The sixty-ninth annual meeting of the South Carolina Medical Association was held in Spartanburg, April 17-19, under the presidency of Curran B. Earle, Greenville. Aiken was selected as the place of meeting for 1918, and the following officers were elected: president, Dr. Frank H. McLeod, Florence; vice presidents, Dr. Kenneth M. Lynch, Charleston; L. Rosa H. Gantt, Spartanburg, and Pettis G. Ellesor, Newberry, and secretary-treasurer, Dr. Edgar A. Hines, Seneca (reelected).

TEXAS

Sanatorium Needed.—The Harris County Medical Society has presented a petition to the city council asking for the immediate establishment of a tuberculosis hospital at Shepherds Dam.

New Sanatorium.—Dr. Hubert F. Leach, Weatherford, has purchased the buildings formerly occupied by the Fairmount Seminary, and will remodel the buildings for sanatorium purposes. The name of the institution will be the Weatherford Sanatorium and the staff will consist of Drs. Hubert F. Leach, Frank M. Moose and Austin Leach.

Rural Health Bureau.—The Texas State Board of Health has established a Bureau of Rural Sanitation the activities of which will be devoted entirely to directing, supervising and assisting in the conduct of the rural health work made possible by the recent appropriation of the legislature of $70,000 which is to be supplemented by a like sum from the Rockefeller Foundation through the International Health Board. Dr. Platt W. Covington, professor of preventive medicine in the medical department of the University of Texas, has been selected by the agencies concerned as head of this bureau.

WISCONSIN

Sanatorium Opened.—The Marathon County Tuberculosis Sanatorium, Rib View, was formally opened April 18. The capacity of the institution is 42, and Dr. Webster A. Ladwig, county commissioner, is in charge.

Personal.—Dr. George B. Noyes has been appointed local surgeon for the Minneapolis, St. Paul and Sault Ste. Marie Railroad at Stone Lake.——Dr. Charles M. Gould, health officer of Superior, has resigned on account of ill health.——Dr. Thomas P. Russell, Oshkosh, celebrated his ninetieth birthday April 19.——The residence of Dr. Edward J. Purtell, Milwaukee, was damaged by fire to the extent of $500, April 10.——Dr. Oscar Lotz, Milwaukee, has been appointed to fill the unexpired vacancy on the state board of medical examiners caused by the resignation of Dr. John M. Beffel, Milwaukee.

CANADA

Canadian Physicians for Service in Orient.—Four Toronto medical officers—Captains W. G. M. Smith, H. A. Abraham; Lieutenants F. H. Boone and D. G. Finlayson—have been chosen by the militia department for special service in the

Orient. They will leave for Vancouver shortly for China, and from thence to France in charge of Chinese coolies.

Personals.—Dr. Forbes E. Godfrey, M. P. P., Mimico, Ont., has gone to British Guiana for a trip.——Dr. Charles K. P. Henry, Montreal, has returned from Atlantic City.——Lieut.-Col. Irving H. Cameron, Toronto, has been visiting in Ottawa, Ont.——Dr. D. J. Gibbe Wishart has been elected president of the Academy of Medicine, Toronto; Lieut.-Col. Alexander Primrose, vice president; Dr. Jabez H. Elliott, hon. secretary (reelected); Dr. J. Herbert McConnell, treasurer.

Department of Health Recommended.—Dr. Michael Steele, M. P., Stratford, Ont., submitted a resolution in the Canadian House of Commons last week calling for the creation of a Department of Health for the Dominion of Canada. A federal department of health would in no way conflict with the existing provincial boards of health. The Hon. Martin Burrell, under whose department is administered the work of the director-general of public health, believed the time would come when it would be necessary to coordinate all activities in regard to human health, medical research work, national health as it affects international problems as well as sanitation.

Hospital News.—One year ago the total returned disabled soldiers under the care of the Canadian Hospitals Commission totaled 1,530. On April 15, 1917, the number stood at 5,677.——There has been a reduction in Canadian wounded soldiers in England hospitals from 20,256, Oct. 20, 1916, to 14,545, March 30, 1917.——Canadian hospitals will soon have accommodation for 1,250 returned tuberculous soldiers.——The total accommodation now in sight in Canada for returned convalescent soldiers is about 8,600, without including hospitals for the insane.——A home for incurables has been established in Toronto for soldiers. It was formerly the Massey-Treble Home in Jarvis Street. Thirty patients can be accommodated, and it is the first of its kind to be established in Canada.——Nearly 600 men are working on additions to hospitals, and on the erection of new buildings with existing institutions all over Canada for the care of returned wounded solders.——The Immigration Building at Quebec is being completely remodeled into a clearing depot; it will house 1,000 men. Special accommodation has been set apart for tuberculosis cases, and cases of mental derangement.——The Immigration Building, Halifax, N. S., has been completely remodeled, and has been transformed into a clearing hospital for 450 men. The officers of a hospital ship arriving the other day stated they had never seen such excellent provision for landing wounded men.

GENERAL

American Physicians Convene at Atlantic City.—The American Physicians' Convention met in Atlantic City, N. J., last week and the following officers were elected: president, Dr. Francis H. Williams, Boston; vice president, Dr. Alexander McPherdran, Toronto; secretary, Dr. Thomas McCrae; treasurer, Dr. Joseph A. Capps, Chicago, and recording secretary, Dr. Thomas R. Boggs, Baltimore.

Bequests and Donations.—The following bequests and donations have recently been announced:

St. Luke's Hospital, New York City, $100,000 by the will of Mrs. Ellen S. James.

National Jewish Hospital for Consumptives, Denver, Colo., $10,000 by the will of Cary Wormser.

Montefiore Home, New York City, $25,000; Mt. Sinai Hospital, New York City, $5,000 by the will of Julius Robertson.

Railway Surgeons Organized.—The surgeons of the Georgia Railway, Charleston and Western Carolina Railway, Georgia, Florida Railway and Augusta, Georgia Railroad, met in Augusta, Ga., April 17, and perfected an organization, electing the following officers: president, Dr. Howard J. Williams, Macon, Ga.; vice presidents, Drs. George L. Smith, Swainsboro, Ga., and David E. McMaster, Tennille, Ga., and secretary-treasurer, Dr. Hugh R. Tison, Allendale, S. C.

Health Insurance vs. Sickness Insurance.—The Conference of State and Territorial Health Officers with the United States Public Health Service, which met, April 30, in Washington, D. C., adopted the following resolution defining its attitude in relation to health insurance and sickness insurance:

Resolved, That in the judgment of this conference the use of the phrase "health insurance" to describe a system of sickness relief that makes no specific, positive, and definite provision for the conservation of health is liable to [illegible] of existing health agencies and to retard their [illegible]

Resolved, That in any scheme for health insurance all activities looking toward the active conservation and promotion of health should be entrusted to the regularly established health conservation agencies, which should be reorganized or reinforced for that purpose, if necessary.

Preventing Infectious Diseases.—The United States Public Health Service has issued for the benefit of the public a bulletin calling attention to the importance of preventing communicable and infectious diseases and to a number of bulletins issued free by the government designed to aid in bringing about this desirable result. Among the bulletins which may be had for the asking are the following: "Good Water for Farm Homes," Public Health Bulletin 70; "Typhoid Fever—Its Causation and Prevention," Public Health Bulletin 69; "Prevention of Malaria," Reprint 170; "The Prevention of Pellagra," Reprint 307; "Tuberculosis, Its Predisposing Causes," Supplement 3; "Hay Fever and Its Prevention," Reprint 349; "Infantile Paralysis," Reprint 350; "Malaria—Lessons on Its Cause and Prevention," Supplement 18 (for use in schools); "Fighting Trim—The Importance of Right Living," Supplement 5; "What the Farmer Can Do to Prevent Malaria," Supplement 11; "The Care of the Baby," Supplement 10.

FOREIGN

New Hospital for China.—Reports state that a new central hospital, planned by American architects, has been erected in Peking, China, at a total expense, for building and equipment, of approximately $250,000, on property costing an additional $21,000. The building is of gray brick, with red tile roof, and is strictly fireproof. It is 262 feet broad, an average of 90 feet deep and 65 feet high, consisting of three floors and basement. The cement and iron used are of Chinese manufacture. The building is equipped with all the modern surgical and bacteriologic instruments, costing over $25,000. The medical director is Dr. Wu Lien-Teh, who was educated in Cambridge, England, and who is said to have won fame by his work during the plague epidemic in Manchuria in 1911. The resident staff will be chosen from Chinese graduates of medical schools of different countries, including China. Administrators, physicians and nurses are all to be natives of China. A motor ambulance service has been established in connection.

Retirement of Penna.—Having reached the age limit, Prof. J. Penna retires from the chair of epidemic diseases at the University of Buenos Aires and from the leadership of the Public Health Service, which he may be said to have founded in Argentina. To his efforts was due the founding of the model Hospital Muñiz in 1894 destined for contagious diseases and as an aid in teaching epidemiology. Penna has also been at the head of the entire hospital system at Buenos Aires since 1906, the Asistencia Publica, as it is called. His works on smallpox, yellow fever and other epidemics published in 1884 and thereafter have long been classic, and in 1894 his studies of spider bites and since then his work in serotherapy and prophylaxis in general have given valuable results for the country and for science, especially his countrywide study of malaria and the most practical means to apply prophylactic measures. Lozano, secretary of the Public Health Service, retired with Penna, and a testimonial ceremony was arranged for the farewell gathering at which Prof. R. Kraus delivered the main address, lauding "the first and the greatest epidemiologist of Argentina, José Penna." An artistic souvenir bronze plaque was presented to each.

Deaths in the Profession Abroad.—**F. F. Ulrik** of Copenhagen, the oldest physician in Denmark, aged 99. He took a leading part in the movement to provide more hygienic homes for the laboring classes, and published as early as 1867 an appeal for insurance against sickness and old age. He was also a member of the legislature at one time.——**J. Kaarsberg** of Copenhagen, a prominent surgeon and gynecologist, titular professor of the University of Copenhagen, aged 51.——**L. von Muralt**, chief of the Davos Santorium for the Tuberculous, and author of numerous works on neurologic and psychiatric subjects and on tuberculosis, aged 48. His study of the nervous and mental disturbances with pulmonary tuberculosis, published in 1913, attracted much attention. He began his career as a psychiatrist but contracted pulmonary tuberculosis at the age of 25 and had this to fight the rest of his life. He kept it latent most of the time and his personal experience was an important factor in his success at Davos, which owes much to him during the nearly twelve years he spent there. The obituary notice in our Swiss exchanges states that he married in 1902 an American wife, Miss Florence Hull Watson, M.D., of Philadelphia, who survives him. A list of twenty-four of his works is given and the list of societies, etc.

over which he often presided. The arrangements he made at Davos for the interned war prisoners were taken as a model for other institutions throughout the land.

Projects of the China Medical Board.—The first annual report of the China Medical Board of the Rockefeller Foundation (December, 1914, to December, 1915) sets forth the action of the board in aid of medical progress in China. Among the steps taken up to that time were the purchase of the property of the Union Medical College and Compound in Peking, formerly owned by the London Missionary Society, and also a number of private properties adjoining the college property for the purpose of enlarging the plant. The transfer provided that the college should be conducted by a board of trustees some of the members of which should be from the six missionary societies associated with the London Missionary Society in the conduct of the college previous to its purchase. It was decided to establish a medical school at Shanghai by merging the medical schools of St. John's University, the Pennsylvania Medical School and the Harvard Medical School, all conducted previously in association with missionary societies, and still to be conducted in cooperation with them, each to have membership in the board of trustees of the merged school. The Hunan-Yale Medical School at Changsha was granted $16,500 a year for five years. A modern hospital on a new site is being built and promises to be one of the best in China. Grants are to be made annually to a number of missionary medical schools and hospitals throughout China, beginning first with those easily accessible from the leading medical schools to be developed at Peking and in the lower Yangtze Valley. Among these are a large number of hospitals in north and central China. Among fellowships granted were fellowships for Chinese graduates in medicine, for Chinese nurses and for Chinese pharmacists, and also for a number of medical missionaries for pursuing graduate work.

LONDON LETTER

London, April 16, 1917.

Child Mortality

A report on child mortality by Sir A. Newsholme, medical officer to the Local Government Board, has just been published. It deals with the years 1911-1914, and therefore may be regarded as uninfluenced by war conditions. During these four years, 575,078 deaths occurred in England and Wales under the age of 5, more than a quarter of the deaths at all ages. There is a great contrast between the mortalities of industrial towns and industrial areas in large cities and places inhabited by the better classes. Thus, in London, Shoreditch had 341 and Finsbury 216 deaths per thousand births against 112 in Hampstead. In the great towns, Burnley had 257, Wigan 254 and Middlesborough 251 against 96 in Ilford and 123 in Swindon. In discussing the causes of this excessive mortality, Sir A. Newsholme dismisses the facile explanation that it is due to ignorance among mothers of the working class. He does not consider that this exists among them to a much greater extent than in other classes of society. Moreover, breast feeding is commoner among them. He attributes the difference in mortality between the two classes to the following causes:

1. The well-to-do mother is commonly able to devote herself to her infant and have assistance in this duty; the working-class mother is single-handed, and has also to perform, unaided, all the duties of her household, including the washing and cooking for her husband and herself and possibly for several children.

2. The well-to-do mother is commonly able to make sure that the milk for her infant is purchased under the best circumstances, is stored in a satisfactory pantry, and is prepared under cleanly conditions. The working-class mother often is supplied with stale, impoverished milk, may have no pantry, and, except when suckling her infant, is handicapped at every stage in the cleanly preparation of her infant's food.

3. If the well-to-do mother is ill, adequate medical and nursing assistance is at once available, and the child's welfare can be safeguarded; if the working-class mother is ill, the child usually must suffer with its mother.

4. If the child of the well-to-do mother falls ill, everything that good nursing and medical attendance can furnish is commonly at once available; for the child of the working-class mother the state of matters is remote from this ideal. Facilities for medical attendance and nursing vary greatly in different districts. In London, in small towns and in rural districts, the nursing assistance provided by district and county nursing associations is usually more generally available than in industrial towns. Prompt medical assistance is of great importance. It is often not available for children of wage earners, and particularly for the children of unskilled workers.

5. Infants and nursing mothers are rapidly influenced by their environment. This environment is complex. The mother is the main element in the environment of the infant. If she is overworked and suffering from chronic fatigue, her infant must suffer; directly, because the mother's milk under these circumstances is liable to be impoverished or otherwise unwholesome, or indirectly, owing to insufficient attention to the infant. The infant of the well-to-do mother is less liable to suffer in either of these ways.

6. Not only are the milk supply and the storage and preparation of artificial food important parts of the environment of the infant, but also the housing conditions of the family, and the sanitary conditions of the back yard and of the street in which the house is situated.

The remedy for this relative "social helplessness" is that medical advice and nursing assistance should be made available for the poor as promptly as for others. The physician, the sanitary inspector, the health visitor and the trained midwife must all be available to give the requisite advice. Such advice is becoming available to an increasing extent.

The War

THE FOOD PROBLEM

A new order for regulating the consumption of food in hotels, restaurants, boarding houses and clubs has been issued. The attempt to restrict consumption by curtailing the number of courses served at meals has failed to achieve its purpose, and the new regulations are on entirely different lines—a system of rationing in bulk. A meatless day once a week is to be observed. In London no meat, poultry or game may be served on Tuesday. Elsewhere the meatless day will be Wednesday. Five potatoless days are to be observed. No potatoes may be served except on the weekly meatless day and on Friday. Rationing is to be on a weekly scale for each person of 4½ pounds of meat, 3½ pounds of bread, 14 ounces of flour, and ½ pounds of sugar. This scale allows 2 ounces of bread for each meal, 2 ounces of meat for breakfast, 5 ounces of meat at luncheon and 5 ounces for dinner. As the unit of calculation is the week, the caterer may, however, allocate the rations to meals as he chooses. Two ounces of poultry and game are to be reckoned as 1 ounce of meat. The weight of meat is to be the uncooked weight, including bone. The order does not apply to a boarding house in which the number of bedrooms does not exceed twelve or to a public eating place at which no meal is served, the cost of which exceeds 30 cents. By a new flour order the percentage of flour from other cereals to be mixed with wheaten flour is increased from a maximum of 15 per cent. to 25, and the minimum from 5 to 10 per cent. This is the fourth new standard for flour since the outbreak of war. The other cereals referred to are maize, barley, rice, maize semolina, oats, rye and beans. Official statistics show that the retail prices of food have increased by 94 per cent since the war began. This calculation does not take into account the considerable economies effected by changes in dietary resulting from the increased prices. Thus such very common economies as the omission of eggs, the substitution of margarin for butter, and the reduction of the consumption of sugar and fish by one half lowers the percentage of increase to 61. It is interesting to compare the percentages of increased prices of food elsewhere: Vienna, 171.7; Italy, 70; United States, over 24; Australia, 25.3, and New Zealand, 25.2. Attention is being directed to the many forms in which food is growing wild in the country and usually neglected. There are over 266 different wild species of the animal and vegetable kingdoms, mostly commonly distributed, easily identified and procured, as well as suitable to simple processes of cooking. Among them are the edible frog found in East Anglia, Surrey and Hampshire, seven species of seaweed, and nearly fifty esculent fungi. Such foods, of course, are available only to those who live in small towns or in the country. It is calculated that these persons should be able to supply during at least three quarters of the year two thirds of their needs from the fields, woodlands, lanes and streams in their immediate neighborhood.

THE HEALTH OF MUNITION WORKERS

Speaking at the Institute of Public Health, Sir Thomas Barlow said that it was a revelation to him how little real illness there has been among the munition workers, considering the amount of work done and the hours of labor. One reason is the excellence of the cooking and the variety of food supplied in the canteen. He did not hesitate to say that people have been fed better than ever before. (The explanation of this, notwithstanding the dearness of food, is the high wages earned.) Women have wonderful powers of endurance, especially in monotonous occupations. It is quite certain that young women do better than men and young boys in this sort of work.

PARIS LETTER

Paris, April 12, 1917.

The War

NECESSITY OF ENTRUSTING ROENTGENOGRAPHY TO MEDICAL MEN

The Society of Medical Roentgenology of France recently held an important meeting under the presidency of Justin Godart, undersecretary of state for the military health service. At this meeting were studied successively the methods of application, the rôle and the utilization of various types of roentgenographic apparatus in the army, the Roentgen ray in the diagnosis of pulmonary tuberculosis in soldiers, Roentgen therapy of war wounds, etc. Besides these technical questions, two communications were of general interest. One article contributed by Dr. Béclère, physician of the hospitals of Paris, points out the necessity of entrusting only to physicians the direction of the roentgenographic service. While praising for their devotion the persons of all conditions and the members of all professions, who have shown themselves eager to serve as roentgenographers during the war, Béclère is of the opinion that the anatomic localization of projectiles, the roentgenoscopic diagnosis of the ostearthropathies and of the lesions of the respiratory, circulatory, digestive and urinary tracts, the application of the Roentgen ray to medicochirurgic surveys or examinations, and, finally, roentgenotherapy demand a knowledge of anatomy, physiology, pathology and chemistry which is possessed only by the physician. The direction of the roentgenographic service is beset by difficulties and dangers, and carries responsibilities which rightfully and legally belong to those in possession of medical knowledge. Therefore, it is necessary to entrust this service exclusively to competent medical men. Barret and Aubourg, on the other hand, insisted on the necessity of leaving to the roentgenologist the free choice of procedures or methods to be used in making his diagnosis. According to Barret and Aubourg, the roentgenographic examination is too often practiced without judgment and without method. Roentgenography is overdone and roentgenoscopy is neglected, and one does not obtain from either one the results which may reasonably be expected. Which of the two procedures should be employed depends on definite indications. A correct diagnosis depends equally on the choice of method, the mode of application and the interpretation of the results. The roentgenologist should be expected not merely to produce a roentgenogram or to do a fluoroscopy, but to make a diagnosis, and to him may be left the choice of the procedures which best suit his purpose, assuming that he will duly consider the existing circumstances which impose on him economy of material and of time. It may be accepted that fluoroscopy suffices, in the majority of cases, to meet the demands of Roentgen diagnosis in war, thus permitting of a notable reduction in the number of plates used.

THE EFFECT OF ALCOHOL ON MARKSMANSHIP

A member of the army medical corps recently presented in the *Concours médical* some interesting information concerning the effect of alcohol on marksmanship. He chose the best shots from among the noncommissioned officers and soldiers of his regiment, and had them fire a series at 200 meters. They were then given a dose of brandy, approximately 50 gm., after which they fired a second series similar to the first. These experiments were repeated at different times and under different conditions with always identical results. It was found that the efficiency of the marksmen after the absorption of the alcohol had depreciated 30 per cent. in rapid firing and 50 per cent. in slow firing.

BREAD RATION FOR THE ARMY

The perpetual secretary of the Department of Agriculture has published a letter from a staff officer and correspondent of the department dealing with the consumption of bread by the troops. The men receive only 650 gm. This measure was adopted in consequence of the preference of soldiers for white bread when they can buy it in the cantonments in which bakeries are still operated. But in the trenches or the second line, when the men are at work, the ration of 650 gm. is insufficient. If sometimes one finds pieces of bread thrown away, pieces of crust especially, this can be explained by the soiling resulting from transport and baking, and by the hardness of the bread, which is consumed ten or fifteen days after it is baked by soldiers whose poor dentition is no longer looked into so carefully.

PRESENTATION OF DECORATIONS TO THE PERSONNEL OF THE CANADIAN HOSPITAL

Under the presidency of Justin Godart, undersecretary of state for the military health service, a ceremony was conducted at which decorations were given to the personnel of the Canadian hospital at Saint Cloud. In the name of the government, Godart presented the cross of the Legion of Honor to Colonel Le Bel, physician in chief of the hospital. Other decorations were presented to the Canadian personnel, the physicians and the male and female nurses who have served for more than a year in that sanitary formation.

Use of Saccharin

A special commission has been appointed by the minister of the interior, under the presidency of Professor Gariel, for the purpose of studying the question of authorizing by decree the use of saccharin in conformance with the advice of the Academy of Medicine and the Superior Council of Hygiene of France (The Journal, March 10, 1917, p. 793; March 17, 1917, p. 860). Being called on to give a medical opinion and to formulate propositions to be taken up by the Superior Council of Hygiene, the commission has proposed the following: That sugar be replaced by saccharin in the sweetening of liquors used in the manufacture of ciders, beer and effervescent wines, in manufactured sweet wines (except products destined for export), and in common liquors and pops. It proposes to authorize the suppression of the use of sugar in cafés, and by all retailers of wines, according permission for the consumer to use saccharin. It would permit the use of saccharinated glucose in the manufacture of preserves, ordinary syrups, jams and compotes. In this connection, the commission has expressed itself as favoring the manufacture of glucose, and the delivering for consumption of all the glucose which is not needed for the manufacture of alcohol destined for the powder works. It has further recommended that the use of the available supply of glucose in the manufacture of alcoholic drinks be not authorized. The commission has rejected the use of saccharin in the manufacture of preserves, jams, compotes, syrups, confectionery, pastry, chocolate and condensed milk. It has declared that if the sugar supply fails it would be better to deny to these industries the distribution of their goods rather than to permit the free use of a suspected product in order to keep up the consumption of commodities which are unfit for food purposes. The commission has rejected the use of saccharin for pharmaceutic products. It proposes that pharmacists be authorized to manufacture sugar syrups, but that they be supervised, to the end that they may not be able to deliver to the public confectioner syrups, but manufacture only medicinal syrups. The opinion was expressed that the public must be informed that the products containing saccharin must not be given to children, and that the sick and the aged must also abstain from their use.

Closing of the Absinth Dispensaries

In response to a question asked of the minister of finance, he has given some interesting details on the number of establishments closed by the enforcement of the law which prohibits the manufacture, circulation and sale of absinth. The number of establishments in France which have been ordered closed for selling absinth is 485 (464 retail and 21 wholesale). These dispensaries were distributed as follows: 108 in the department of Gard, 98 in Bouches-du-Rhône, 40 in Vaucluse, 32 in Hérault, 29 in Var, 17 in Loire, 16 in Rhône, and 11 in Doubs, in Drôme and in Isère; 134 were divided among 46 departments, in which the closures numbered from one to nine.

Death of Prof. A. Combe

We record the death of Prof. A. Combe of Lausanne, at the age of 58. He was for many years connected with the University of Lausanne in the department of pediatrics. He had become well known through his works on intestinal autointoxication and the treatment of enteritis.

Association News

THE NEW YORK SESSION

A Patriotic General Meeting

The Local Committee on Arrangements reports that because of the war, the committee contemplates substituting a patriotic general meeting for the formal reception which has usually been given in honor of the President of the Association and which this year would have been held on Thursday evening of the week of the annual session.

While the plans are not yet fully matured, it is the purpose of the committee to have for this meeting speakers of national and international reputation, who are familiar with the issues of the day. The meeting will be held in a large hall and reservations to accommodate the Fellows and their guests will be made, then the remaining space will be at the disposal of the public. It is probable that ex-President Theodore Roosevelt and Mr. Joseph H. Choate, late ambassador to Great Britain, will be among the speakers.

The American Medical Golfing Association

Plans for the 1917 tournament of the Association are under way. The Garden City Golf Club has extended the courtesy of its course subject to the payment of a greens fee of $2 for each player. Play will be in foursomes arranged by the Fellows themselves, starting on prearranged schedule at five minute intervals from 8:30 for morning play and 1 o'clock for afternoon play. Luncheon will be served from 12 to 2 at the Garden City Hotel adjoining. The annual golf dinner and meeting will be held in the evening.

To be fair to all, an early announcement of the plan of entries is now made. The events will be patterned after those of last year, and section captains are expected to get out their respective teams. All foursomes will start from the first tee, where entry cards will be accepted. All entries will be made in the order received, but time for play cannot be assigned until three Fellows of a foursome are entered. Entries will close when the capacity of the course is reached (thirty-five foursomes). In any event they will close in the Chicago office, May 20, and will then be forwarded to New York. Entry blank, covering the needed data, will be mailed on request. Full program of events will be forthcoming duly. Members of the Golfing Association are requested to urge their confrères to send in their two dollar enrolment fees that a strong list may be presented to the local committee at New York.

Address all communications to the secretary, 1414 Chicago Avenue, Evanston, Ill.

Thomas Hubbard, President.
Will Walter, Secretary-Treasurer.

Missouri Valley and Southwest Special

The Missouri Valley and Southwest special, as announced last week, will leave Kansas City, Saturday evening, June 2, at 8 o'clock, via the Santa Fé Railroad, and arrive at Chicago 9 a. m. Sunday. It will leave Chicago 10 a. m. Sunday, arriving in New York via the Pennsylvania line at 2:20 p. m. Monday. There will be no change of cars and no extra fare on this train. For service address Dr. Fred. H. Clark, El Reno, Okla.; Dr. Charles Wood Fassett, Lathrop Building, Kansas City, Mo., or the nearest Santa Fé agent.

Southeastern Passenger Association Rates

Those residing in territory covered by the Southeastern Passenger Association who expect to attend the New York session are referred to the thirty day summer excursion fares, sixty day variable route summer excursion fares and season limit summer excursion fares which will be in effect from the Southeast to New York. The thirty day summer excursion tickets are on sale daily from June 1 to September 30, inclusive. The sixty day variable route summer excursion tickets are on sale May 22 to October 15, inclusive, bearing limit of sixty days. The season limit summer excursion tickets are on sale from May 15 to October 15, inclusive, which tickets bear limit of October 31.

Banquet for Women Physicians

The Women's Medical Association of New York is planning a banquet to be given at the Hotel McAlpin, Wednesday evening, June 6, 1917, for the women physicians who will be in New York to attend the meetings of the American Medical Association. Tickets, $3, may be obtained from Dr. Mathilda K. Wallin, 616 Madison Avenue, New York.

NEW YORK CLINICAL SESSIONS

(Continued from page 1378)

Admission Tickets to the Clinics, Demonstrations and Exhibits incorporated in the Clinical Sessions program will be issued *only* to members and guests who register and make application at the American Medical Association Headquarters.

Guests other than physicians and dentists will not be admitted to the Medical and Surgical clinics.

Special Badges and Buttons will be issued to guests (other than physicians and dentists) of the Clinical Sessions and of the American Medical Association who wish to attend the demonstrations, moving pictures and exhibits or inspect the different nursing, medical, municipal and public health institutions arranged for in the program by the Committee on Preventive Medicine and Public Health and the Committees on Allied Topics, including Trained Nursing and Training Schools, District Nursing System, Hospital Social Service, and Planning and Financing of Municipal and Non-Municipal Hospitals.

Fellows of the American Medical Association may apply in advance by mail for tickets of admission to the Clinical Sessions. In writing for the three sessions (Monday afternoon, Tuesday morning and Tuesday afternoon) give first, second and third choice, as seating capacity of amphitheaters is limited. Tickets of admission will be delivered after registration at the American Medical Association Headquarters.

GENERAL CLINICAL SESSIONS COMMITTEE[1]

Wendell C. Phillips, Chairman
Samuel G. Gant, Sec.
Alexander Lambert
D. Campbell, Asst. Sec.
Floyd M. Crandall

PHARMACOLOGY AND THERAPEUTICS

Frank S. Meara, Chairman
Philip Eichler
Robert A. Hatcher
Malcolm Goodridge, Secretary
Charles C. Lieb
George B. Wallace

Tuesday Morning, June 5

BELLEVUE HOSPITAL, Sage Institute of Pathology—11. Demonstration of respiration calorimeter, Dr. Eugene F. Du Bois.

LOOMIS LABORATORY—10. Demonstration: action of certain drugs on normal and abnormal circulation in animals, Drs. George B. Wallace, R. A. Hatcher, Cary Eggleston.

Tuesday Afternoon, June 5

COLLEGE OF PHYSICIANS AND SURGEONS—3. Laboratory of Pharmacology; Demonstration: pharmacologic action of pituitary extract, Dr. Charles C. Lieb.

PATHOLOGY AND PHYSIOLOGY

A. Clinical and Medicolegal

Otto H. Schultze, Chairman
Charles Norris
Fred S. Mandlebaum
Alwin M. Pappenheimer

Monday and Tuesday Mornings, June 4 and 5

CORNELL UNIVERSITY MEDICAL COLLEGE—10. Necropsies at mortuary; demonstration of medicolegal specimens illustrating intracranial injury, strangulation and abortion; pathologic department, Dr. Otto H. Schultze.

Monday and Tuesday Afternoons, June 4 and 5

CORNELL UNIVERSITY MEDICAL COLLEGE—2. See program, Cornell University Medical College, 10 a. m., Monday and Tuesday.

B. Laboratory (Diagnostic)

Frederic E. Sondern, Chairman
Joseph R. Losee
Ward J. MacNeal
O. S. Hillman, Secretary
Reuben Ottenberg
William H. Park

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[1] The complete program will be available in due season, and will be mailed to those who request it, sending to the committee a stamped addressed envelope.

Monday Afternoon, June 4

BELLEVUE HOSPITAL—2. Necropsy findings, female breast, Drs. J. N. Worcester, B. Morgan Vance; aspects of pathology and histology of visceral syphilis, Dr. Douglas Symmers; carcinoids of small intestine, Dr. B. Morgan Vance; primary and secondary neoplasms of bony system, Dr. Douglas Symmers; laboratory specimens, pathologic staff. Demonstration: surgical pathologic specimens, genito-urinary tract, Dr. Oswald F. Lowsley.

BETH ISRAEL HOSPITAL—3. Pathology splenic anemia and polycythemia; specimens illustrating general pathology; microscopic pathology of appendicitis, Dr. E. Moschcowitz.

FORDHAM UNIVERSITY MEDICAL SCHOOL—2. Gross and *microscopic* pathologic specimens, Drs. L. Heitzmann, G. Fried; interesting pathologic charts, Drs. L. Heitzmann, G. Fried.

GERMAN HOSPITAL, N. Y.—3. Selection donors for transfusion by blood *tests, Dr. A. L. Garbat.*

HAHNEMANN HOSPITAL—2. Laboratory methods, Drs. D. S. D. Jessup, G. P. Olcott.

KINGS COUNTY HOSPITAL (Brooklyn Laboratories of Pathology) —3. Standardizing reading of Wassermann reactions; instrument *whereby* physician, while operating, can dictate to stenographer in another room, Dr. B. T. Terry.

LYING-IN HOSPITAL—*2.* Museum specimens; lantern slide demonstration of laboratory findings in pregnancy and labor complications; chemistry of blood and urine in pregnancy, Dr. J. R. Losee.

MANHATTAN EYE, EAR AND THROAT HOSPITAL—2. Wassermann and other serum reactions; blood plates *from* cultures; fruit and flower allergy sensitization with various fruits, pollens, etc., with *reactions on sensitized* patients; pathologic specimens of eye, ear and throat, Dr. J. G. Dwyer.

MONTEFIORE HOME AND HOSPITAL—2. Demonstration hospital metabolism ward, Dr. N. W. Janney; pathologic specimens chronic disease, Dr. B. S. Kline; demonstration unusual Roentgen-ray findings, *Dr. Thomas Scholz.*

MOUNT SINAI HOSPITAL—2. Methods diagnosing stomach, liver and pancreatic diseases, Dr. B. B. Crohn; morphology normal and pathologic blood cells, Dr. N. Rosenthal. 3. Blood-sugar analysis and its clinical applications; chemical pathology in nephritis, Dr. A. A. Epstein; transfusion tests, Dr. R. Ottenberg. 2. Cholesterin in cholelithiasis, Drs. M. A. Rothschild, A. O. Wilensky. 4. Microchemical methods for clinician, Dr. T. Kuttner; methods studying functions of the stomach with reference to surgical procedures, Drs. A. O. Wilensky, B. B. Crohn.

NEW YORK CITY HEALTH DEPARTMENT (Bureau of Laboratories), *149* Center Street—2. Diagnostic examinations: diphtheria, tuberculosis, malaria, typhoid, syphilis and gonorrhea; microbial milk examinations for city milk control, Dr. Hatfield.

NEW YORK EYE AND EAR INFIRMARY—4. Pathologic eye specimens, Dr. George S. Dixon.

NEW YORK HOSPITAL—2. Use of a mechanically sterilized room in bacteriologic technic; making postmortem blood cultures; intravenous injections of rabbits by special animal holder and transillumination, Dr. W. J. Elser; use sugar-containing mediums for differentiation gram-negative cocci and members diphtheria organisms; isolation typhoid and paratyphoid bacilli *from stools,* and their *differentiation*; use centrifuge for clarification agar and other mediums; handling ascitic fluid aseptically, Dr. G. W. Wheeler; identification different types pneumococcus infection, bacteriologically and by examining urine, Dr. Larsen; diagnosis hypersensitiveness to foreign proteins, Dr. Coca and Cooke; Wassermann reaction technic, Drs. J. M. Kent and W. H. Baughman; clinical significance Wassermann reaction, Dr. A. F. Coca; apparatus, care of stool specimens and their disinfection, Dr. R. G. Stillman; methods used in blood chemistry: sugar, carbon dioxid capacity of plasma, total nonprotein nitrogen, urea, uric acid, creatinin, Dr. R. G. Stillman; isolation vitamins from lamb's pancreas; cage for rats used in metabolism studies, Dr. Walter E. Eddy.

PRESBYTERIAN HOSPITAL—2. Method determining type of pneumococcus, Miss M. P. Ohmstead.

ROOSEVELT HOSPITAL—2. Hexamethylenamin kidney-function test as compared with others; methods blood analysis, nephritic test meal, etc., Dr. W. G. Lyle.

ST. MARY HOSPITAL, Brooklyn—2. Gross microscopic pathology, Dr. W. Moiterer.

SKIN AND CANCER HOSPITAL—2. Skin tumors; cultures pathogenic fungi; laboratory methods, Dr. D. S. D. Jessup.

VANDERBILT CLINIC (Outpatient Department)—2. Diagnosis and *treatment* diabetic patients, Drs. Geyelin and H. Wiener.

Tuesday Morning, June 5

BELLEVUE HOSPITAL—10. Certain aspects of pathology and histology visceral syphilis, Dr. Douglas Symmers; laboratory specimens, *Pathologic* staff of hospital; primary and secondary neoplasms of bony system, Dr. Douglas Symmers.

COLLEGE OF *PHYSICIANS* AND SURGEONS—9. Grouping typhoid and paratyphoid organisms, Dr. Weiss; complement fixation acid-fast group, including lepra bacilli, Dr. Cook; complement fixation in tuberculosis, Dr. H. R. Miller; rabbit syphilis, Dr. McBurney; specific leukocytosis, Dr. Tsen; Wassermann reaction technic, Dr. Reuben Ottenberg; bacterial anaphylaxis, Dr. Hans Zinsser; clinical diagnosis, Dr. W. T. Gies and assistants. 10. Museum of Anatomy, Dr. George S. Huntington and assistants.

HAHNEMANN *HOSPITAL*—10. See program, Hahnemann Hospital, 2 p. m., Monday.

LYING-IN HOSPITAL—10:30. See program, Lying-In Hospital, 2 p. m., *Monday.*

MANHATTAN *EYE,* EAR AND THROAT HOSPITAL—10. See program, Manhattan Eye, Ear and Throat *Hospital, 2 p. m.,* Monday.

NEW YORK CITY *HEALTH* DEPARTMENT (Bureau of Laboratories), Foot of East 16th Street—9:30. Relation microbes to dairy scores; microbal control, *laundries,* Dr. Schroeder. 10:10. Antitoxins, Dr. Banzhaf; serums and bacterial vaccines; fecal examinations in typhoid and related fevers, Dr. Charles Krumwiede. 11:20. Diphtheria control, Dr. W. H. Park. 11:40. Schick reaction, Dr. Abraham Zingher. 12. Pneumonia diagnosis and treatment, Dr. Charles Krumwiede.

SKIN AND CANCER HOSPITAL—11. See program, Skin and Cancer Hospital, 2 p. m., Monday.

Tuesday Afternoon, June 5

BELLEVUE *HOSPITAL*—*2.* See program, Bellevue Hospital for 2 o'clock, Monday *afternoon.*

BETH ISRAEL HOSPITAL—3. See program, Beth Israel Hospital, 3 p. m., Monday.

CITY HOSPITAL (Strecker Memorial Laboratory), Blackwell's *Island—1. Colloidal* gold reaction in paresis and tabes, and allied neuropathologic conditions; exhibition brain and spinal cord *specimens, Drs.* J. H. Larkin, I. J. Levy, L. H. Cornwall, R. S. Nelson.

CLINICAL LABORATORY, *20 West 55th* Street—2. Laboratory methods, Drs. F. E. Sondern, O. S. Hillman.

CORNELL MEDICAL COLLEGE—*2*:30. Complement fixation in gonorrhea, Dr. H. J. *Schwartz.* 3. *Complement* fixation in chronic arthritis, Dr. Thomas W. Hastings. 4. Colloidal gold test spinal fluids, Dr. John *Richards. 4:30. Bacteriology,* abscesses of teeth and arthritis, Dr. William C. Thro.

GERMAN HOSPITAL, New York—3. See program, German Hospital, 3 p. m., Monday.

HOAGLAND LABORATORY, 335 Henry Street, Brooklyn—1. *Museum specimens, Dr. Archibald* Murray.

KINGS COUNTY HOSPITAL—*3.* See program, Kings County Hospital, *3* p. m., Monday.

LINCOLN HOSPITAL—*2:30.* Wassermann test, Dr. L. H. *Berliner;* *methods* blood analysis, Dr. Z. Sagal.

LONG ISLAND COLLEGE HOSPITAL—*2.* Complement fixation, tuberculosis, Dr. R. A. Davison; methods *determining blood urea, uric* acid, *creatin* and cholesterin with clinical data and interpretation, Dr. H. M. Feinblatt. 3. Clinical laboratory *for* students in *teaching* hospital; ward and dispensary teaching of medicine, Dr. L. F. Warren.

MANHATTAN EYE, EAR AND THROAT HOSPITAL—2. See program, Manhattan Eye, Ear and Throat Hospital, 2 p. m., Monday.

MONTEFIORE HOME AND HOSPITAL—4. Gross and microscopic *pathologic material,* Dr. B. S. Kline.

MOUNT SINAI HOSPITAL—2, 3, 4. See program, Mount Sinai Hospital, 2, 3, 4, Monday afternoon.

NEUROLOGICAL INSTITUTE—4. Serology, nerve and mental diseases: tests showing type reactions in paresis, tabes and cerebrospinal syphilis, Dr. D. M. Kaplan.

NEW YORK CITY HEALTH DEPARTMENT (Bureau of Laboratories), Foot East 16th Street—2. Diagnosis, rabies, Dr. Williams; rabies vaccine, Dr. *Abramson; smallpox vaccine, Dr. Anthony.* 3. Meningitis, diagnosis and treatment, Dr. J. B. Neal; etiology, poliomyelitis, *Dr. A. W. Williams.* *3:45.* Poliomyelitis, diagnosis and treatment, Dr. J. B. Neal; control of oysters and water, Miss Noble. Laboratory open.

NEW YORK EYE AND EAR INFIRMARY—4. See program, New York Eye and Ear Infirmary, 4 p. m., Monday.

LYING-IN HOSPITAL—*2:30.* See program, Lying-In Hospital, *2* p. m., Monday.

POST-GRADUATE HOSPITAL—1:30. System, receiving and checking specimens and recording and filing laboratory reports, Dr. W. J. MacNeal; isolating typhoid bacilli from feces, Dr. W. L. Aycock; methods, collecting blood, Dr. R. M. Taylor. 2:30. Preparing colloidal gold solution, its use *in* testing cerebrospinal fluids, Dr. J. Wheeler Smith, Jr.; *human intestinal protozoa* and worms, Dr. A. N. Tasker, Captain *Medical Corps, U. S. Army*; *chemical blood analysis: creatinin,* V. C. Myers, Ph.D.; chemical blood analysis: blood sugar, Dr. C. V. Bailey. 3:30. Chemical blood analysis: blood diastase, J. A. Killian, Ph.D.; chemical blood analysis: uric acid, Dr. C. K. Watamabe; chemical blood analysis: cholesterol, Dr. A. J. P. Pacini; chemical blood analysis: urea, V. C. Myers, Ph.D.; chemical blood analysis: carbon dioxid combining power, J. A. Killian, Ph.D.

SKIN AND CANCER HOSPITAL—2. *See program,* Skin and Cancer Hospital, 2 p. m., Monday.

ROCKEFELLER INSTITUTE FOR MEDICAL RESEARCH—66th Street and Avenue A—2. Estimating alkaline reserve by the plasma carbon dioxid method and Fridericia's Alveolar carbon dioxid method, Dr. Edgar Stillman; determination of oxygen content of blood; lowered venous oxygen as a measure of cardiac insufficiency, Dr. Christian Lundsgaard; rapid accurate method, estimating hemoglobin, Dr. W. W. Palmer; determination of acetone and beta-hydroxybutyric acid in blood and urine, Dr. R. Fitz; determination of urea in blood and urine by urease method, Dr. G. E. Cullen; determination of chlorids in blood, Drs. Franklin McLean, D. D. Van Slyke; rapid method donors for transfusion, Dr. Peyton Rous; methods for isolating and identifying types pneumococcus lobar pneumonia, Drs. C. T. Avery, A. M. Chesney; technic electrocardiography, Dr. R. A. Morison.

ROOSEVELT HOSPITAL—2. See program, Roosevelt Hospital, 2 p. m., Monday.

ST. LUKE'S HOSPITAL—2. Serologic technic, Dr. L. W. Famulener; methods chemical pathology, O. I. Lee.

WOMAN'S HOSPITAL—2. Gynecologic pathology, Dr. Lawrence W. Strong.

C. Cancer Research

Francis C. Wood, Chairman
William H. Woglom, Secretary
James Ewing
W. G. MacCallum

Monday Afternoon, June 4

CROCKER LABORATORY, 1145 Amsterdam Avenue—2. Demonstration laboratory methods, cancer research, Drs. W. H. Woglom, Frederick Prime and H. N. Stevenson.

Tuesday Afternoon, June 5

MONTEFIORE HOME AND HOSPITAL—2. Demonstration: research in tumors of animals and plants; radium and *Roentgen therapy* in cancer; institutional care, advanced inoperable carcinoma (cases).

PEDIATRICS

Rowland G. Freeman, Chairman
Henry Dwight Chapin
Abraham Lincoln Goodman
Alfred F. Hess
Royal S. Haynes, Secretary
L. Emmett Holt
Nathaniel R. Norton
Godfrey R. Pisek
Oscar M. Schloss

Monday Morning, June 4

NEW YORK POLYCLINIC HOSPITAL—10. Clinic, *Dr. Henry Heiman.*

Monday Afternoon, June 4

BABIES' HOSPITAL—2. Ward demonstrations and methods intensive research, Dr. W. R. Norton.

BELLEVUE HOSPITAL—2. Survey work, cardiac clinic, Huddleston Foundation, Dr. A. H. Bingham. 4. Meningitis, prematurity, cardiac decompensation, Dr. L. E. LaFetra and Dr. H. B. Wilcox. 3:30 and 5:30. Application recent advances in clinical pathology, Dr. Oscar M. Schloss.

GERMAN HOSPITAL—2. Interesting ward cases: chorea, autoserum therapy; unit system of hospital construction, Drs. Abraham Jacobi and Abraham L. Goodman.

LONG ISLAND COLLEGE HOSPITAL, Brooklyn—4. Demonstration solarium and methods of treating joint tuberculosis affections, Dr. E. H. Bartley.

MOUNT SINAI HOSPITAL—4. Bedside cases (children) in Wards Y and Z, Dr. Henry Koplik.

POST-GRADUATE HOSPITAL [illegible] atment, cardiac cases, Dr. Henry Dwight Chap [illegible] l cases, Drs. G. R. Pisek and N. C. Pease. 4. [illegible], heart class, electrocardiograph in children, Dr. Robert H. Halsey.

ROOSEVELT HOSPITAL—4. Cases, roof treatment, Drs. Rowland G. Freeman and Philip Van Ingen.

ST. CHRISTOPHER'S HOSPITAL, Brooklyn—2. Survey children's hospital, Dr. W. A. Northridge.

WILLIARD PARKER HOSPITAL—2. Cases exanthems, Dr. Louis Fischer. 4. Diphtheria, cases and direct method, larynx intubation, Drs. Eli Long and Henry L. Lynch.

Tuesday Morning, June 5

BABIES' HOSPITAL—10. Ward cases and methods intensive research, Dr. Frederick H. Bartlett.

CHILDREN'S HOME BUREAU, 327 Schermerhorn Street, Brooklyn—9:30. Exhibition: methods, caring for and placing dependent children in homes, Dr. Garlick and Mr. John Daniels.

HEBREW INFANT ASYLUM, Kingsbridge Road—10. Infantile scurvy; rickets; duodenal tube passage; survey of cubicle ward, Dr. A. F. Hess.

MOUNT SINAI HOSPITAL—10. Clinic, Wards Y and Z, children's pavilion, Dr. Herman Schwartz.

NURSERY AND CHILD'S HOSPITAL—10. Roof pavilion; modern reception ward; methods of diagnosis; studies in rickets and tetany, Drs. Freeman, R. S. Haynes and J. F. Sammis. 11:30. Examination, methods boarding-out department, Dr. R. S. Haynes and Miss Katherine Holmes.

POLYCLINIC HOSPITAL—10. Clinic, Dr. Charles Gilmore Kerley.

POST-GRADUATE HOSPITAL—10. Amphitheater A, phases infant feeding; cases, Drs. A. Caillé and R. H. Dennett.

ST. LUKE'S HOSPITAL—10. Cases in active children's ward; modern reception ward; survey work children's cardiac clinic, Drs. C. F. Collins, W. P. St. Lawrence.

WILLARD PARKER HOSPITAL—10. Schick reaction and results of toxic-antitoxic injections, Drs. W. H. Park, A. Zingher.

Tuesday Afternoon, June 5

BABIES' HOSPITAL—2. Clinic, Dr. L. Emmett Holt.

BELLEVUE HOSPITAL—2. Work in malnutrition clinic; nutrition problems, older children, Dr. C. H. Smith. 4:30. Meningitis, prematurity, cardiac decompensation, Drs. L. E. LaFetra, H. B. Wilcox, 3:30 and 5:30. Application recent advances in clinical pathology, Dr. Oscar M. Schloss.

CITY HOSPITAL, Blackwell's Island—2. Cardiac and nutritional cases, Dr. Walter Lester Carr.

DEPARTMENT OF HEALTH, 149 Centre Street—1:30. Work of Bureau of Child Welfare, Dr. S. Josephine Baker and staff; group-system care dependent children vs. institutional care, Dr. Henry Dwight Chapin.

HEALTH DEPARTMENT, Station at 421 East 74th Street—2. Methods, conducting milk stations, Dr. Jacob Sobel.

MOUNT SINAI HOSPITAL—2. Demonstrations Wards Y and Z, Children's Pavilion, Dr. Henry Heiman.

NEW YORK AMERICAN BABY HOSPITAL, Brooklyn — 2. After-care, poliomyelitis, Dr. L. C. Ager.

NEW YORK FOUNDLING HOSPITAL—4. Care of foundlings, Dr. Joseph O'Dwyer.

NEW YORK HOSPITAL—4. Results in feeding vitamins for marasmus, Dr. Joseph C. Roper.

PRESBYTERIAN HOSPITAL—4. Roentgen-ray studies, pneumonia in children, Drs. William P. Northrup, Howard H. Mason.

ST. JOHN'S GUILD SEASIDE HOSPITAL, Staten Island — 2. Methods: operating seaside hospital, Dr. David Bovaird, Jr. Visitors will be transported from St. John's Guild to Sea View Hospital (for tuberculous).

ST. MARY'S FREE HOSPITAL FOR CHILDREN—4. Clinic, Dr. Dever S. Byard.

WILLARD PARKER HOSPITAL — 2. Exanthems, cases, Dr. Henry W. Berg. 4. Diphtheria, cases and direct method of intubation, Drs. Eli Long and Henry L. Lynah.

DERMATOLOGY

Howard Fox, Chairman
John A. Fordyce
James C. Johnston
Jerome Kingsbury
Walter J. Heimann, Secretary
Boleslaw Lapowski
William B. Trimble
Henry H. Whitehouse
James McF. Winfield

Centralized clinics will be held at the New York Academy of Medicine by dermatologic representatives of the medical schools, hospitals and institutions of Greater New York, instead of individual clinics.

Monday Afternoon, June 4

NEW YORK ACADEMY OF MEDICINE—2. General dermatologic clinic (from 100 to 150 rare cases).

Tuesday Morning, June 5

NEW YORK ACADEMY OF MEDICINE—10:30. Leprosy clinic (from fifteen to twenty-five lepers).

Tuesday Afternoon, June 5

NEW YORK ACADEMY OF MEDICINE—2. General dermatologic clinic (from 100 to 150 rare cases).

NEUROLOGY

Edward D. Fisher, Chairman
William Browning
Foster Kennedy
John J. McPhee
Isador Abrahamson, Secretary
Bernard Sachs
M. Allen Starr
William Steinach
Frederick Tilney

Monday Morning, June 4

MONTEFIORE HOME AND HOSPITAL—9. Cases illustrating pituitary diseases, Dr. H. Climenke; cases dystonia musculorum, Dr. Moses Keschner; reeducational exercises in tabes dorsalis, Dr. Morris Grossman.

Monday Afternoon, June 4

BELLEVUE HOSPITAL—2. Neurologic clinic, Bellevue Hospital wards, Dr. Edward D. Fisher.

CITY HOSPITAL, boat from foot East 53d Street half-hourly—3. Clinic: organic nervous conditions, Dr. William Steinach.

MONTEFIORE HOME AND HOSPITAL, conveyance from Academy of Medicine to the Home and return—2. Globus pallidus syndrome—cases, Dr. J. Ramsey Hunt; moving pictures in the study of nervous diseases; neoplasms of brain: cases; pathologic specimens, Dr. S. P. Goodheart; neurologic conditions associated with polyarthritis; pathology and treatment polyarthritis, Drs. S. P. Goodhart, I. Strauss; cases showing varieties of tremor; myopathies, Dr. Isador Abrahamson.

NEUROLOGICAL INSTITUTE—2. Neurologic surgery, Drs. C. A. Elsberg, Alfred S. Taylor.

POLYCLINIC HOSPITAL—2. Operations: cases cerebral spastic paralysis, hydrocephalus, Dr. William Sharpe.

POST-GRADUATE HOSPITAL—2. Treatment paresis by intraventricular injection salvarsan and mercury; cases, Dr. Graeme Hammond.

Tuesday Morning, June 5

CENTRAL AND NEUROLOGICAL HOSPITAL, Blackwell's Island; boats from foot of East 70th Street every half hour—9. Psychic symptoms superimposed on organic nervous disease; cases, Dr. J. J. Walsh; thalmic syndrome; cases; paraplegic tumors spinal cord; cases, Dr. Joseph Byrne; brain tumors; cases illustrating tremors, Dr. Isador Abrahamson; cases illustrating types sensory disorders; cases illustrating pituitary diseases, Dr. Hyman Climenke; laminectomy operations, Dr. Harold Neuhof.

POST-GRADUATE HOSPITAL—9. Psychologic mechanism hysteria; cases, Dr. E. S. Jelliffe.

Tuesday Afternoon, June 5

BELLEVUE HOSPITAL—2. Methods and cases in addiction and alcoholic wards, Dr. Charles A. Dana.

CITY HOSPITAL—2. Clinic, Dr. E. L. Hunt.

FORDHAM HOSPITAL—2. Brachial palsy, Dr. Alfred S. Taylor.

KINGS COUNTY HOSPITAL—3. Clinic, Dr. William Browning.

MOUNT SINAI HOSPITAL—2. Operative clinic, Dr. C. A. Elsberg. 3. Clinic, Dr. Bernard Sachs.

NEUROLOGICAL INSTITUTE—2. Neurologic surgery, Drs. Alfred S. Taylor, C. A. Elsberg.

POST-GRADUATE HOSPITAL—2. Teaching nervous diseases; cases, Dr. J. J. McPhee.

VANDERBILT CLINIC—2. Clinic, Drs. M. Allen Starr, Frederick Tilney.

MENTAL DISEASES

Carlos F. MacDonald, Chairman
William Mabon
Menas S. Gregory
George H. Kirby, Secretary
William L. Russell
Thomas W. Salmon
Max G. Schlapp

Monday Afternoon, June 4

BELLEVUE HOSPITAL—3. Psychopathic and alcoholic divisions; psychiatric, drug and alcoholic cases, Dr. M. S. Gregory.

MANHATTAN STATE HOSPITAL, Ward's Island (boat leaves East 116th Street every half hour)—3. Demonstration—pathologic laboratory—cerebral arteriosclerosis, brain tumors, Alzheimer's disease, pellagra, Dr. C. O. Cheney.

NEW YORK CITY CHILDREN'S HOSPITAL, Randall's Island (boat leaves East 125th Street every half hour)—2. Psychiatric and neurologic clinic, Drs. L. Pierce Clark, Walter Timme and John T. MacCurdy.

Tuesday Morning, June 5

MANHATTAN STATE HOSPITAL, Ward's Island (boat leaves East 116th Street every half hour)—10:30. Staff conference and clinic, Dr. George H. Kirby.

POST-GRADUATE HOSPITAL—10. Clearing house for mental defectives; clinic, Dr. Max Schlapp.

SING SING PRISON, Ossining, N. Y.—10. Psychiatric clinic, Dr. Bernard Glueck.

Tuesday Afternoon, June 5

BLOOMINGDALE HOSPITAL, White Plains (via Grand Central Station)—2. Occupational and other therapeutic activities, Dr. William L. Russell.

NEUROLOGICAL INSTITUTE—5. Psychiatric clinic, Dr. Joseph Collins.

NEW YORK CITY CHILDREN'S HOSPITAL, Randall's Island (boat leaves East 125th Street every half hour)—2. Feeblemindedness, Dr. W. B. Cornell; institutional methods of examination, classification and obtaining services of specialists; tests for mental care.

(*To be continued next week*)

Marriages

John R. Lilliendahl, M.D., Shippan Point, Stamford, Conn., to Miss Mabel Hume Andrews, at Noroton, Conn., April 19.

P. A. Surg. Robert Francis Jones, U. S. Navy, to Miss Ann Elizabeth Penniman, in Savannah, Ga., April 24.

Anthony F. DeGraffenried, M.D., Bayside, L. I., N.Y., to Miss Amanda Butt of Adairville, Ky., April 21.

Edgar Allen Johnson, M.D., New York City, to Miss ola Estelle Beatty of Coaling, Ala., April 25.

Harry Webster Burnett, M.D., Dayton, Ohio, to Miss Elizabeth Vale of Franklin, Ohio, April 19.

Charles Franklin Moon, M.D., Superior, Wyo., to Miss Olga C. Olsen of Harlan, Iowa, April 23.

Mary A. MacMillan, M.D., Spokane, to Mr. Henry B. Rodney, at Great Falls, Mont., April 7.

Will Ambrose Thompson, M.D., to Miss Nelle O'Toole, both of Liberty, Ind., April 22.

Arthur William Koessel, M.D., to Miss Eleanora Knoeller, both of St. Louis, April 21.

Edgar Ward Hill, M.D., Dayton, Ohio, to Miss Helen Vale of Franklin, Ohio, April 19.

Lester Irving Ofner, M.D., to Miss Clara Pines, both of Chicago, recently.

Felix J. Baur, M.D., to Miss Helen M. Sweeney, both of Chicago, April 4.

Deaths

George H. Moody, M.D., San Antonio, Texas; Tulane University, New Orleans, 1896; aged 44; a Fellow of the American Medical Association, and vice chairman of the Section on Nervous and Mental Diseases in 1911; president of the State Medical Association of Texas, in 1916; president of the Medical Association of the Southwest, in 1909; once president of the Bexar County Medical Society and Fifth District Medical Society; a member of the American Medico-Psychological Association; for six years a member of the staff of the state insane hospitals at San Antonio and Austin; founder of the Moody Sanitarium for Mental and Nervous Diseases, San Antonio; died April 29.

DeWitt Webb, M.D., St. Augustine, Fla.; College of Physicians and Surgeons in the City of New York, 1863; aged 77; formerly a Fellow of the American Medical Association; a member and once president of the Florida Medical Association; acting assistant surgeon, United States Army, in 1886; mayor of St. Augustine, in 1912; at one time a member of the New York State Legislature; a member of the State Legislature of Florida, in 1903; president of the St. Augustine Historical Society and Institute of Science; died in the Flagler Hospital, St. Augustine, April 12.

Ephraim Cutter, M.D., West Falmouth, Mass.; Harvard Medical School, 1856; University of Pennsylvania, Philadelphia, 1857; aged 84; formerly a Fellow of the American Medical Association; a member of the Massachusetts Medical Society; a well known microscopist and a food expert; formerly professor of morphology and applied medicine in the College of Physicians and Surgeons, Boston; a prolific contributer to the literature of dietetics and morphology; for many years a practitioner of New York City; died at his home, April 25, from cerebral hemorrhage.

Herbert McIntosh, M.D., Boston and Cambridge, Mass.; Bellevue Hospital Medical College, 1896; aged 60; a Fellow of the American Medical Association; president of the Thurber Medical Association in 1899; a specialist in roentgenology; assistant to the department of nervous and mental diseases of the Massachusetts General Hospital; author of a "Practical Hand Book of Medical Electricity"; medical examiner (coroner) for the Seventh Norfolk District from 1896 to 1901; who was admitted to the bar in 1888; died at his home in Cambridge, Mass., April 24.

John Lawrence Dawson, M.D., Charleston, S. C.; Medical College of the State of South Carolina, Charleston, 1881; aged 57; a Fellow of the American Medical Association; fermerly president of the South Carolina Medical Association and the Medical Society of South Carolina; emeritus professor of medicine in his alma mater; visiting physician to the City Hospital, Charleston, and in charge of the eye and ear clinic of the Shirras Dispensary, Charleston; died at his home, February 20, from pulmonary emphysema.

Henry T. Godfrey, M.D., Omaha, Neb.; Rush Medical College, 1865; aged 76; formerly a Fellow of the American Medical Association; a member of the Nebraska State Medical Association; until 1911 a practitioner of Galena, Ill., where he was one of the founders of St. Mary's Hospital; district surgeon of the Chicago and Northwestern System; assistant surgeon of the One Hundred and Fifty-Sixth Illinois Volunteer Infantry, during the Civil War; died at the home of his daughter in Omaha, April 17.

Henry McHatton, M.D., Macon, Ga.; Bellevue Hospital Medical College, 1881; aged 61; a Fellow of the American Medical Association; and president of the Medical Association of Georgia in 1904, and of the Macon, Ga., Medical Society in 1890; a founder and member of the board of trustees of the Macon Hospital, and later chairman of the board; assistant surgeon of the Central of Georgia Railway; died at his home, April 22, from endocarditis following influenza.

Adoniram Judson Banker, M.D., Columbus, Ind.; Medical College of Indiana, Indianapolis, 1876; Bellevue Hospital Medical College, 1880; aged 71; formerly a Fellow of the American Medical Association; formerly professor of principles of surgery in the Central College of Physicians and Surgeons, Indianapolis; proprietor of the Columbus Surgical Hospital; local surgeon for the Pennsylvania and Big Four systems; died at his home, April 23.

Edwin McLaren Williams, M.D., Memphis, Tenn.; College of Physicians and Surgeons in the city of New York, 1896; aged 43; once president of the Memphis and Shelby County Medical Society; assistant to the chair of anatomy and demonstrator of anatomy in Memphis Hospital Medical College; chief sanitary inspector of Memphis, from 1900 to 1905; died at his home, April 12.

John William Anderson, M.D., Richmond, Va.; University of Maryland, Baltimore, 1854; aged 82; a practitioner of Alabama until the Civil War; and during the war engrossing clerk in the Confederate Senate; later deputy clerk of the Hustings Board of Richmond, and examiner of real estate titles; who was admitted to the bar in 1884; died at his home, January 9, from uremia.

Sherman F. Chase, M.D., Caro, Mich.; Detroit Homeopathic Medical College, 1872; aged 72; one of the organizers and Supreme Medical Examiner of the Order of Gleaners; coroner of Tuscola County, Mich., for twenty years; for several years president of the village of Caro; died suddenly at the home of his nephew in Bay City, March 30, from acute gastritis.

Nathan Rosencrantz, M.D., San Francisco; Cooper Medical College, San Francisco, 1888; University of Wurzburg, Germany, 1888; aged 49; formerly a member of the Medical Society of the State of California; for four years city physician of San Francisco; surgeon to the Municipal Railways; died in Lane Hospital, San Francisco, April 17, from diabetes.

Lyman Little Whitaker, San Antonio, Texas (license, Texas); a practitioner since 1858; aged 82; a veteran of the Civil War; at one time surgeon general of the Grand Army of the Republic; for many years surgeon of the San Antonio & Aransas Pass and Gulf Shore railroads; assistant surgeon to the Southern Pacific System; died at his home, April 16.

Joseph Martin Good, M.D., Williston, Fla.; Chattanooga, Tenn., Medical College, 1898; aged 46; a member of the Florida Medical Association; while driving across a railway track at Raleigh, Fla., April 20, was run over by a train, sustaining a crushing injury of both feet at the ankles, and died nine hours later in St. Luke's Hospital, Jacksonville.

Edward V. MacDonald, M.D., Chicago; Harvard Medical School, 1886; aged 58; a Fellow of the American Medical Association; professor of principles of medicine in the Chicago Hospital College of Medicine; for many years a member of the staff of Cook County Hospital; died at his home, April 28, from heart disease.

Madison G. Nixon, M.D., Columbia, Ill.; St. Louis Medical College, 1865; aged 73; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; a veteran of the Civil War, in which he served as a surgeon of U. S. Volunteers; died at his home, January 12, from cerebral hemorrhage.

Otto Leslie Castle, M.D., Kansas City, Mo.; University of Michigan, Ann Arbor, 1909; aged 32; a Fellow of the American Medical Association; who established the pathologic laboratory at the Kansas City General Hospital, and conducted it for three years; died at his home, April 30, from typhoid fever.

Alexander Thomson, M.D., Sumas, Wash.; College of Physicians and Surgeons, Baltimore, 1909; aged 44; a member of the Washington State Medical Association; and since 1912 a member of the staff of the Dalton Hospital, Sumas; died in that institution, April 19, after an operation for acute appendicitis.

John Wesley Pollard, M.D., Los Angeles; Cincinnati College of Medicine and Surgery, 1889; aged 56; formerly health officer of St. Johns, Mich., and physician of Clinton County, Mich.; surgeon to the Clara Barton Hospital, Los Angeles; was found dead in his office, April 14, from heart disease.

Roscoe George William Kinder, M.D., Rockford, Ill.; College of Physicians and Surgeons, Chicago, 1901; aged 41; a Fellow of the American Medical Association; a member of the attending staff of the Rockford City Hospital; died in that institution, April 19, from acute suppurative peritonitis.

Herschel N. Waite, M.D., Johnson, Vt.; Eclectic Medical College of the City of New York, 1882; aged 67; formerly a Fellow of the American Medical Association; a member of the Vermont State Medical Society; health officer of Johnson for nine years; died at his home, March 9, from nephritis.

William Appleton Bell, M.D., Somerville, Mass.; Harvard Medical School, 1876; aged 66; a member of the Massachusetts Medical Society, and formerly president of the Somerville Medical Society; visiting physician to the Somerville Hospital; died at his home, April 3, from angina pectoris.

John Calvin Sutherland, M.D., St. Joseph, Mo.; St. Joseph, Mo., Hospital Medical College, 1879; aged 78; a member of the Missouri State Medical Association, and for many years a practitioner of Savannah, Mo.; died in St. Joseph Hospital, St. Joseph, April 24, after a surgical operation.

Justo del Risco, Jr., M.D., Center Moriches, N. Y.; College of Physicians and Surgeons in the City of New York, 1879; aged 58; formerly a practitioner of Brooklyn, and for many years a member of the staff of the DeMilt Dispensary; died in Brooklyn, April 13, from heart disease.

Frank G. Williams, M.D., Jacksonville, Fla.; Southern Medical College, Atlanta, Ga., 1891; formerly surgeon to the Camp Lumber Company, White Springs, and local surgeon of the F. C. and P. Railway, at Maclenney, Fla.; died in a hospital, in Jacksonville, April 20.

Erastus Test, M.D., Lafayette, Ind.; University of Michigan, Ann Arbor, 1868; Indiana Medical College, Indianapolis, 1873; aged 80; for more than half a century a teacher and since 1888 professor of mathematics in Purdue University, Lafayette; died at his home, April 22.

Sigmund Beck, M.D., Brooklyn; New York University, New York City, 1892; aged 50; formerly a member of the Medical Society of the State of New York; for many years visiting pediatrist to the Coney Island and Bay Ridge hospitals; died at his home, April 22.

William Edward Douglas, M.D., Middletown, N. Y.; Bellevue Hospital Medical College, 1876; aged 62; a Fellow of the American Medical Association; and a member of the medical staff of Thrall Hospital, Middletown; died at his home, April 21, from nephritis.

Samuel Joseph Bassford, M.D., Portland, Me.; Medical School of Maine, Brunswick, 1881; aged 68; a Fellow of the American Medical Association; died in St. Barnabas Hospital, Portland, March 16, from secondary hemorrhage, following a surgical operation.

Landon Augustus Colquitt, M.D., Rio Vista, Texas; Vanderbilt University, Nashville, Tenn., 1895; a member of the State Medical Association of Texas; aged 64; died at his home, April 19, from heart disease.

Henry Frost, M.D., Marshall, Va.; Medical College of the State of South Carolina, Charleston, 1861; aged 77; a member of the Medical Society of Virginia; died at his home, March 23.

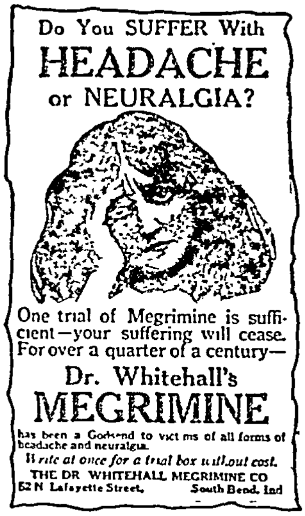
John Buchanan Wilson, M.D., Ottumwa, Iowa; Trinity Medical College, Toronto, Ont., 1879; aged 44; a Fellow of the American Medical Association; died in Kansas City, Mo., April 20.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

SOME MISBRANDED NOSTRUMS

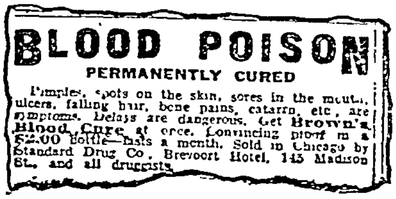
Whitehall's Megrimine.—The Dr. Whitehall Megrimine Co., South Bend, Ind., shipped in interstate commerce two batches of "Dr. Whitehall's Megrimine" which the government declared was misbranded. One of the batches was analyzed by the Bureau of Chemistry and reported to contain 211.88 grains of acetanilid to each avoirdupois ounce. Caffein and salol also were present. The average weight of the contents of one capsule was 5.66 grains. The second batch consisted of white capsules and pink capsules. The contents of the former, according to the analysis of the Bureau of Chemistry, were found to be a mixture of acetanilid (210.3 grains per avoirdupois ounce) caffein and salol. The average weight of the contents of one capsule was 6.24 grains. The pink capsules were found to contain antipyrin 98.03 per cent. and cayenne pepper. The government charged that the claim that these products were effective for the relief of all forms of headache and neuralgia, were a stimulant and tonic for the nerves and for relieving nervous exhaustion were false and fraudulent and made knowingly and wantonly. The company pleaded guilty and was fined $50 and costs.—[*Notice of Judgment No. 4540.*]



Do You SUFFER With
HEADACHE
or NEURALGIA?

One trial of Megrimine is sufficient—your suffering will cease.
For over a quarter of a century—
Dr. Whitehall's
MEGRIMINE
has been a Godsend to victims of all forms of headache and neuralgia.
Write at once for a trial box without cost.
THE DR WHITEHALL MEGRIMINE CO
62 N Lafayette Street, South Bend, Ind

Brown's Blood Treatment.—This preparation was manufactured and sold by the Brown Co., 935 Arch St., Philadelphia, and had formerly been called "Brown's Blood Cure." The preparation was analyzed by the federal chemists, who reported that it contained 5.65 grams of potassium iodid and 0.1 gram of a mercury compound to each 100 c.c. It was claimed to be a cure for syphilis in all its forms and to be effective in the treatment of all forms of rheumatism, chronic sores, chronic ulcers, scrofula, boils, carbuncles, eczema, contagious blood poison and various other conditions. These claims were declared to be knowingly and wantonly false and fraudulent. The company pleaded guilty and was fined $100.—[*Notice of Judgment No. 4443.*]



BLOOD POISON
PERMANENTLY CURED

Pimples, spots on the skin, sores in the mouth, ulcers, falling hair, bone pains, catarrh, etc., are symptoms. Delays are dangerous. Get **Brown's Blood Cure** at once. Convincing proof in a $2.00 bottle—lasts a month. Sold in Chicago by Standard Drug Co., Brevoort Hotel, 143 Madison St., and all druggists.

Classe's Great Penetrating Liniment.—William P. Diggs of St. Louis, who traded under the name W. P. Diggs & Co., sold this preparation, which contained 64 per cent. alcohol, 10 minims of tincture of opium to the ounce and 38 minims of chloroform to the ounce. Government chemists reported that analysis showed the liniment to be "an alcoholic solution of ammonia, chloroform, opium, camphor, oil of sassafras, oil of origanum and a thujone-containing oil such as thuja." The government declared that the claims that this liniment would prevent blood poison from wounds, was a remedy for tuberculous sores, would remove goiter and was a certain cure for colic in horses and mules were knowingly, recklessly and wantonly false and fraudulent. Diggs pleaded guilty and was fined $10 and costs.—[*Notice of Judgment No. 4424.*]

Brown's "935" Injection (Formerly H. W.).—The Doctor Brown Company, Philadelphia, shipped in interstate commerce a quantity of "Brown's '935' Injection (formerly H. W.)." The Bureau of Chemistry reported that the preparation was "a dilute solution of acetate and sulphate of zinc." Some of the claims made for it were:

> "Invaluable as a Preventive and in the Treatment of Chronic Gonorrhoea, Gleet, Whites, Etc."
>
> "A Preventive and a Certain and Speedy Remedy for Chronic Gonorrhoea, Gleet, Whites, Etc."

These and similar claims were declared false and fraudulent. The company pleaded guilty and was fined $75.—[*Notice of Judgment, No. 4143.*]

Correspondence

TYPHOID IN AMERICAN CITIES

To the Editor:—I wish to comment on how false may be the impression of betterment of any one city's record comparable to neighboring cities as shown in the recent fifth annual report on typhoid fever. Each year the footnote reads that a false exaggeration is possible because nonresident deaths are recorded as well as resident deaths. For the cities in Connecticut there was reported to the state board of health for 1916, as total typhoid deaths, Bridgeport, 11; Hartford, 20, and New Haven, 12. This would give a rate per hundred thousand population of 9, 18.1 and 8, respectively. As printed in The Journal, the rates read 9, 6.3 and 8, respectively. The difference I find is that Hartford alone of the three cities returned resident deaths alone, seven in number. Instead of leading, Hartford either has a record no different from the previous year, or else if nonresident deaths do not count, New Haven's record becomes 5.3, with four nonresident deaths excluded. It would seem probable that other cities may have done the same to obtain a record, in which case such a point should be considered in obtaining the sixth annual report.

Also I would ask if it were not possible for a more critical criticism to be made of individual cities in terms of their own problems. For example, in 1915 the report asks why New Haven should continue to have ten times as much typhoid as Cambridge. Massachusetts probably and Rhode Island for certain are on record as having house closets even in rural neighborhoods. New Haven like the South, unlike the North, has yet numerous privies on sewered streets, let alone countless numbers on unsewered streets. New Haven's greatest sanitary expert, Prof. William H. Brewer, professor of sanitary science, Sheffield Scientific School, as president of the board of health placed himself yearly, even daily, on record for years that New Haven's typhoid problem was but one of privies. The survey for Springfield, Ill., placed that city also in the same class. Were it possible to make every city health officer criminally liable for typhoid deaths in excess of a rate of 10, I believe many cities the country over would have both active officials as well as a low typhoid rate by merely counting the number of privy vaults in their cities before abolishing them. Privy vaults and typhoid are not a special province of the South. An increase of population in Bridgeport due to munition workers should not explain an increased rate when New Haven had as great an increase of population for the same reason. Your compiler of statistics can then force improved rates from some cities by merely compelling the health officials of these cities to record resident and nonresident deaths separately as well as publishing their declaration as to the definite individual problem of that city which may not be water, milk or foods which yearly are the presumed factor.

D. M. Lewis, M.D., New Haven, Conn.

[Comment.—The point raised regarding the possible false impression obtained by comparing one city with another, due to one city giving the total number of typhoid deaths and another only the number of deaths in cases arising in the city, was taken into account. Effort was made to secure the total number of deaths from typhoid fever in each of the cities named. It is conceded that, in order to be fair, the comparison should be made on this basis in each instance, and the footnote referred to was appended to call attention to the possibility of error in this respect. If figures were called for to show separately the number of typhoid deaths of nonresidents, or in cases arising from causes within and without the cities, the judgment or opinion of the health boards or officers compiling the figures would enter in and the conclusions deduced might be still more unfair than in the first instance. The suggestion that our study should be more critical of individual cities in terms of their own problems is perhaps pertinent, but this would be practically impossible. The further suggestion "to make every city health officer criminally liable for typhoid deaths in excess of 10" would be extremely unfair in view of the grossly inadequate assistance and appropriations for health work in every city in the land, and the shortcomings in other conditions bearing on typhoid fever, over which the city health officer has no possible control.—Ed.]

SHORTAGE OF SALVARSAN AN INTOLERABLE BURDEN

To the Editor:—I have noted with great interest and satisfaction the beginning of a determined effort on the part of the Chicago and some other medical societies, to do away with the salvarsan patent burden. It is a relief, at last, to see the city men taking up a matter which has become an intolerable burden to us all. I hope and pray that this will not prove merely a sporadic effort, but that The Journal and all active medical periodicals as well as every county medical society will make this matter a propaganda which cannot be ignored by Congress. D. Powell Johnson, M.D., Muscatine, Iowa.

THE DATING OF BIOLOGIC PRODUCTS

To the Editor:—The report of the Council on Pharmacy and Chemistry on this subject (The Journal, March 3, 1917, p. 728) seems to me a distinct advance. In a discussion of the matter with those active in the Council, it was suggested that a statement of the procedures adopted in the Bureau of Laboratories of the Department of Health, New York City, as well as our attitude toward additional requirements, would be of interest to the readers of The Journal. In the course of this statement, certain of the regulations of the Council are questioned. This is not to be interpreted as a criticism, as the regulations adopted by the Council are evidently preliminary and no doubt will be amplified with further experience in their enforcement.

Our present rules covering the distribution of biologic products are as follows:

1. The label on all bacterial vaccines must state the date of preparation. (This means the day suspensions are made, standardized and killed.)
2. The label on all serums other than antitoxins shall state the date of bleeding.
3. The label on antitoxins shall give the "Date tested XXXX," this being the date of last test on this preparation.
4. The label on vaccine virus shall, like the antitoxins, have the "date tested," this being the date of last test.

We have no intention of extending the periods of potency of bacterial vaccines (four months) or of the serums (nine months) other than the antitoxins until we have very specific data on which to act. The only possible exception is typhoid vaccine. The additional and necessary potency tests demanded by the Hygienic Laboratory as at present carried out mean practically a month's time in preparation. We may be compelled, as soon as we have sufficiently fair presumption to act on, to label the vaccine for four months' potency after completion of the tests. Comparative work indicates that it may be possible to determine the antigenic value in about ten days. The Hygienic Laboratory is at work on this problem, and if the shorter period method is successful, no change will be necessary for the present.

It might be well to state briefly our method of handling vaccine virus. The green virus is shipped to the laboratory in a portable ice chest, the temperature of which varies from 5 to 8 C. It is immediately finished on its arrival and placed in cold storage on the same day, the temperature of storage being —15 C. As a rule, two weeks at least must elapse before sufficient purification takes place so that the virus will pass the bacteriologic tests required by the Hygienic Laboratory. Potency tests are then undertaken. This consists of a vaccination of children, and 100 per cent. of "takes" is necessary to pass a virus. The period of time in cold storage before potency tests are made varies from four to eight weeks. As soon as a potency test is completed, a return date of six months later is placed on this batch of virus (three months in summer) whether it is issued at this time or not. All viruses are retested every month. When issue is started, tests are made biweekly, and should they fail to give 100 per cent. of "takes," the virus is recalled. As the batch is issued, the date of the last test is stated; but the date of return remains the same for all of this batch, as stated above. All virus is kept in cold storage till issued. We have nearly always on hand parts of batches which have been in cold storage six months or more after the first potency tests. This, being continually tested, if 100 per cent. potent, is used locally in the department. We reserve the privilege of issuing such virus in emergencies, if we have a guarantee that it will be used promptly. Within the city limits the distribution stations are controlled by inspection so that adequate refrigeration is maintained. Naturally we have no responsibility as regards vaccine virus purchased by others for distribution.

I think you will agree with me that the methods employed more than meet the demands of the Council and, with the human potency tests, comprise as near an ideal system as can be devised for the protection of the purchaser.

In the regulations in their present form there are several points which seem to me to leave opportunities for misunderstanding if not for actual fraud. For instance, "the date of killing of the bacteria shall be taken as the date of manufacture" (Section 3). Does not this leave a loophole by which bacterial suspensions could be placed in cold storage and heated at any time thereafter, and this given as the date of killing?

The intention of Section 4 is not clear to me. As I understand it, it seems to defeat the purpose of the preceding paragraphs. Does this mean that serums other than antitoxins and bacterial vaccines can be placed in cold storage for 364 days after actual preparation or date of bleeding and then issued with a new date (issue), implying that the latter date is the date of preparation or of bleeding? If so, I do not see how your regulations will improve present conditions.

The same objection holds as regards the "date of manufacture" of vaccine virus. I agree that the potency will be maintained to a large extent under the conditions given, but why not qualify, for example, that the actual date of potency test within the periods mentioned, will be accepted, the date of "testing" to be stated, not a pseudodate of preparation?

I cannot but feel that a uniform demand for the date of preparation should be demanded for all bacterial vaccines, the date of bleeding on all serums, and the last date of potency tests for antitoxins and for vaccine virus would be better than to allow substitute terms such as date of issue, etc. The duration of potency allowed could then be based on the facilities for storage and the influence of the latter on potency.

Another point which I should like to raise, which undoubtedly the Council is considering, is the labeling of certain products as to their contents and, wherever feasible, as to their potency. For instance, pneumococcus serum means nothing without a statement as to "type," and furthermore there seems no reason why the potency of the serum in relation to "type" should not be required. In the case of some serums, such statements are not immediately feasible because we know relatively little, first, as to the relationships of the bacteria used for immunization and, secondly, as to determining potency. Even the results of imperfect tests in some instances are preferable to none at all, and would at least indicate that every effort was being made to keep the product up to its highest efficiency. At least the physician has a right to know everything concerning the content and potency of a product. When because of a lack of knowledge we cannot guarantee either the applicability to a given case or the potency of a product, we should frankly say so.

One great step in this direction would be a demand for the discontinuance of the term "polyvalent" unless evidence is submitted that a product is truly polyvalent. For instance, a polyvalent pneumococcus or streptococcus vaccine or serum is a practical impossibility with our present knowledge, yet such terminology is used and the physician misled.

William H. Park, M.D., New York.
Director, Bureau of Laboratories, Department of Health, City of New York.

COMPULSORY HEALTH INSURANCE

To the Editor:—May I point out one feature of the health insurance bill as at present drafted which, while seemingly of especial interest to the medical profession, is really of equal interest to the community, but which is usually ignored? Certainly its importance to the beneficiaries of the bill and hence to the general community seems to be overlooked. I refer to the fact that no specific price is set for the services of the physicians who will be required to do the actual work in caring for and protecting the health of the workers. It is stated by the sponsors for the bill that it is desirable to leave the determination of fees to the commission. It is estimated by those favoring the bill that for $2,000 annually physicians need make only from twenty to thirty calls a day, and we are given to understand that such an assured income is a very liberal one for a physician, while the amount of work required of him is sufficiently light to permit him ample time for sleep, rest, recreation and study. Striking an average with these figures, we find that twenty-five calls a day total 9,125 calls a year, for which a return of $2,000 a year is to be considered liberal! This figures out 22 cents for each call. Do the well intentioned sponsors of the bill really believe that human beings practicing medicine are so different from human beings in other walks of life that for 22 cents they will render service worth much more than 22 cents? Or do they believe that medical service rendered at a cost of 22 cents a call ever was or ever will be competent and thorough? It is well for all to understand that incompetent, hasty and slipshod medical service is much worse than none at all, for unaided nature can do better by the sick than the careless and hasty physician. It also cannot be too emphatically stated that no decent and self-respecting physician who cares anything about the quality of his work and about the effect of his service on his patients' health, can, single handed, make twenty-five calls a day and have left time enough to eat, rest, sleep, study and even sometimes play. In these swiftly moving times, what physician can keep afloat who has not time to read and study? And what human being can profit from reading and study attempted when physically and mentally exhausted? Therefore let all concerned clearly understand that, if it is sought to compel the earner to have medical attention which he now often fails to get, though he may sorely need it, the medical attention is worth having only if it is carefully and competently administered, and careful and competent medical service cannot be had at a price which will buy only the poorest and most incompetent. An underpaid doctor will not do good work; an overworked doctor cannot do good work.

M. Schulman, M.D., New York.

Repairing Rubber Gloves.—N. I. Spriggs, M.D., a correspondent in the *Lancet*, March 31, 1917, describes his method of repairing rubber operating gloves by vulcanizing them, similar to the manner in which automobile tubes are repaired. Spriggs devised an electric vulcanizer for the purpose which he says is used in many military and civil hospitals, and a saving of 50 per cent. in glove bills may be effected in this way. The patches applied in this manner are so small as to be almost impalpable, they do not come off even after repeated sterilizations, a new finger can be put on, a long slit can be repaired, a new wrist affixed or two damaged gloves made into one good one.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

DETECTION OF TUBERCLE BACILLI IN THE FECES

To the Editor:—In The Journal, Feb. 17, 1917, p. 588, in an abstract of an article in *Hygica*, mention is made of the Reh ether extraction method of detecting tubercle bacilli in the feces. Can you furnish me with the technic of Reh's method? Also with the technic of the Engleson method likewise mentioned in the abstract?

Harold H. Fox, Tallahassee, Fla.

Answer.—The Reh method was described in the *Zeitschrift für Tuberkulose*, 1913, **21,** 209, and lauded as extremely simple and reliable, its superiority over other methods in vogue being shown by the tabulated findings with comparative tests with the Kozloff, antiformin and a diluted ether method. The lump of stool in an Esbach glass is stirred with a glass rod into enough freshly distilled boiled water to make a soft paste, solid enough not to flow when the glass is tilted. Then ether is added and the whole is, briefly shaken, the glass stoppered with rubber. Then the ether is poured off into a centrifuge glass. A single centrifugation answers, and even this can be dispensed with, as the sediment settles soon on setting the glass aside. The ether is then decanted and the sediment is shaken up with a little remnant of the ether and poured out on the object glass. It adheres to the glass and the Ziehl stain is then applied. The sediment may be found to consist predominantly of bacteria. Positive findings were obtained in the feces when they were not to be found in the sputum in some cases, and in others when there was no expectoration. Engleson's method consists merely in scraping the rectal mucosa with an ordinary sound which has been hollowed out at one end to make a spoonlike cavity. The sound is introduced for a few centimeters into the rectum and drawn around to scrape the surface. The grayish slimy mass thus collected in the spoon cavity is smeared directly on the object glass.

LITERATURE ON WHOLE TIME HEALTH SERVICE

To the Editor:—Please inform me where I can find literature on the subject of whole time health service, and also where I can get information as to the names of cities and large towns which employ a whole time health officer.

Have any articles on this subject appeared in The Journal during the past year?

S. H. Boyer, M.D., Duluth, Minn.

Answer.—

Abercrombie, T. F.: Plea for All Time Health Officer in Every County, *Georgia Med. Assn. Jour.*, February, 1916.
Way, J. H.: Rural Sanitation in South, Two Vital Forces, Whole Time County Health Officer and Specialized Units of Health Work by State Boards of Health, *South. Med. Jour.*, March, 1916.
Kerr, J. W.: The Need of Full Time Health Officers, The Journal, Nov. 6, 1915, p. 1595.
Grote, C. A.: Full Time Health Officer Work in Walker County (Ala.), *South. Med. Jour.*, December, 1915.
Cowing, H. A.: Need of Whole Time Health Officer, *Lancet-Clinic*, Aug. 22, 1914.
Full Time Health Officers, Miscellany, The Journal, March 14, 1914, p. 874.
Wood, H. B.: Need of Whole Time Health Officers, The Journal, Nov. 15, 1913, p. 1772.
Leathers, W. S.: Whole Time Health Officer, Society Proceedings, The Journal, May 10, 1913, p. 1486.
Fort, A. G.: Need of Full Time County Health Officers, *Georgia Med. Assn. Jour.*, May, 1913.
Directory of City Health Officers: Pub. Health Rep., 1916, **31,** 1669.

THE TWO MASCAGNIS: MUSICIAN AND ANATOMIST

To the Editor:—Kindly inform me if you have given in your column of "Tonics and Sedatives" Mascagni, the author of "Cavalleria Rusticana" and other works, as being an investigator of the lymphatics a century ago? See The Journal of the American Medical Association, March 17, 1917, page 850, first column. I hear Morgagni exclaim: "What is fame?"

E. E. Blaauw, M.D., Buffalo.

Answer.—This item does not belong in Tonics and Sedatives. The statement to which Dr. Blaauw refers occurs in an editorial on "The Lymphatics and Infections of the Urinary Tract."

> No one can charge the deficit in our knowledge of the lymphatics to the novelty of the subject, for more than a century has elapsed since the lymph system in its entirety was described by Mascagni.

Paolo Mascagni was an Italian anatomist who lived from 1755 to 1816. He wrote a most complete work on lymphatics. This work was entitled "Vasorum lymphaticorum corporis humani historia et iconographia," Sienne, 1787, in-fol., with forty-one plates.

Pietro Mascagni was an Italian composer, born 1863. Besides various musical works and songs, he wrote the operas "Cavalleria Rusticana," "L'Amico Fritz" and "I Rantzau."

Giovanni Battista Morgagni, 1682-1771, was also an Italian anatomist and pathologist who is regarded as the founder of pathologic anatomy, and his most famous work is "De sedibus et causis morborum per anatomen indagatis" libri V, Venice, 1761. Numerous anatomic structures are associated with his name. He did no special work on the lymphatics.

Dr. Blaauw's sense of hearing must be very acute if he hears Morgagni complain because he is not credited with something he never did.

LUBRICATING JELLY

To the Editor:—1. What is the composition of "K-Y Lubricating Jelly"?

2. Can you furnish a formula for a simple nongreasy lubricating jelly?

S. T.

Answer.—1. The composition of "K-Y Lubricating Jelly" has not been divulged. Examination of the advertising matter reveals only meaningless statements, such as: "This is a judicious combination of vegetable products . . . Combined in well balanced proportions with non-irritating antiseptics . . . ," "It incorporates a sufficient quantity of mild antiseptics (of the Thymol class) . . ." and ". . . contains *NO* formaldehyde."

2. Probably a simple tragacanth jelly, which can be made cheaply, will produce the same effects as those of the proprietary preparation. The following formula was published by Mr. J. K. Thum, apothecary at the German Hospital, Philadelphia (*Druggists Circular,* September, 1915, p. 586):

LUBRICATING JELLY

Tragacanth, whole	3 gm.
Glycerin	25 c.c.
Phenol	1.5 gm.

Distilled water, a sufficient quantity to make 300 c.c. The tragacanth is broken in small pieces, and put into a wide-mouthed bottle; the other ingredients are added and the bottle frequently shaken.

In regard to this formula, Mr. Thum writes:

> It has been used in our gynecologic department for years. . . . For the last six years we have been dispensing it in collapsible tubes throughout the hospital for general work.

USE OF SALVARSAN IN TABES WITH OPTIC ATROPHY

To the Editor:—Is salvarsan contraindicated in a case of moderately advanced tabes in which there are symptoms, one eye being almost blind. Any information you can give me on the treatment of tabes will be greatly appreciated.

Please omit my name. L. L. A.

Answer.—It is asserted by some observers that salvarsan occasionally produces optic atrophy. Others, however, including men who have had extensive experience in the use of this drug, believe that it has no injurious effect on the eye. As blindness caused by optic atrophy occurs in about 10 per cent. of cases of tabes, it is well to warn the patient of this fact, and that his vision is liable to become impaired after treatment with salvarsan. If given at all, it should be administered early in the disease.

THE OLD AUTOMOBILE SUPPLY SCHEME

To the Editor:—For the benefit of those who might be as easy as I, please publish this. A man representing a firm known as the Smith Morris Service Company, of 2417 State Street, Chicago, called on me stating that by depositing $15 with him I would be a member of the Smith Morris Service Company and would receive all automobile supplies that I might purchase from the said company at cost f. o. b. factory for two years from date. I tried him out on half to show what I could save, the balance to be paid when I saw the good it would do me. I was done good. My letters to the firm so named came back "unknown."

M. Burnett Weaver, M.D., Miamisburg, Ohio

Comment.—There are not many who would acknowledge their error as Dr. Weaver has done. The scheme is, of course, an old one, and is being worked right along.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

DELAWARE: Dover and Wilmington, June 19-21. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.
FLORIDA, Regular: Palatka, June 19-20. Sec., Dr. E. W. Warren, Palatka.
GEORGIA: Atlanta and Augusta, May 31-June 2. Sec., Dr. C. T. Nolan, Marietta.
ILLINOIS: Chicago, June 14-16. Sec., Dr. C. St. Clair Drake, Springfield.
IOWA: Iowa City, June 7-9. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.
KENTUCKY: Louisville, June 19-21. Sec., Dr. A. T. McCormack, Bowling Green.
LOUISIANA: New Orleans, June 7-9. Sec., Dr. J. A. Henderson, 921 Canal St., New Orleans.
MARYLAND: Baltimore, June 19. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.
MICHIGAN: Ann Arbor, June 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.
MINNESOTA: Minneapolis, June 5-8. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.
MISSISSIPPI: Jackson, June 19-20. Sec., Dr. W. S. Leathers, Oxford.
MISSOURI: St. Louis, June 18. Sec., Dr. J. A. B. Adcock, Jefferson City.
NEW JERSEY: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, 438 East State St., Trenton.
NEW YORK: Albany, Buffalo, New York, and Syracuse, May 22-25. Sec., W. J. Denno, Education Bldg., Albany.
NORTH CAROLINA: Raleigh, June 19. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.
OHIO: Columbus, June 11-14. Sec., Dr. George H. Matson, State House, Columbus.
OREGON: Portland, June 5. Sec., Dr. Herbert S. Nichols, Corbett Bldg., Portland.
SOUTH CAROLINA: Columbia, June 12. Sec., Dr. A. Earle Boozer, 1806 Hampton St., Columbia.
TENNESSEE: Knoxville, Memphis and Nashville, June 15-16. Sec., Dr. A. B. De Loach, Scimitar Bldg., Memphis.
TEXAS: Austin, June 19-21. Sec., Dr. M. F. Bettencourt, Mart.
VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

District of Columbia January Report

Dr. Edgar P. Copeland, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, Jan. 9, 1917. The total number of subjects examined in was 16; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 13, of whom 8 passed and 5 failed. Three candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1915)	84.6
Chicago College of Medicine and Surgery	(1915)	85.5
Rush Medical College	(1914)	82.9
University of Maryland	(1913)	78.6, 82.2
Cornell University	(1911)	88.2
Temple University	(1915)	77
University of Virginia	(1914)	87.1
FAILED		
Baltimore Medical College	(1905)	71.9
College of Physicians and Surgeons, Boston*	(1916)	72.7
Minneapolis College of Physicians and Surgeons	(1909)	73.4
Meharry Medical College	(1916)	69.6, 69.9

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
Howard University	(1912)	W. Virginia
Medico-Chirurgical College of Philadelphia	(1904)	New Jersey
University of Virginia	(1908)	W. Virginia

* This college reported not recognized by the Massachusetts Medical Society.

Indiana January Report

Dr. W. T. Gott, secretary of the Indiana State Board of Medical Registration and Examination, reports the written examination held at Indianapolis, Jan. 9-11, 1917. The total number of subjects examined in was 16; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 4, all of whom passed, including 1 osteopath. One candidate did not complete the examination. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1917)	87.2
University of Michigan Medical School	(1915)	93.8
University of Pennsylvania	(1913)	92.1

South Dakota January Report

Dr. Park B. Jenkins, secretary of the South Dakota State Board of Health and Medical Examiners, reports the practical and written examination held at Pierre, Jan. 10, 1917. The total number of subjects examined in was 15; total number of questions asked, 125; percentage required to pass, 75. The total number of candidates examined was 8, all of whom passed. Two candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1916)	77.7
Rush Medical College	(1915) 86.1; (1916)	86.1
Kentucky School of Medicine	(1893)	80.5
Detroit College of Medicine and Surgery	(1916)	87.7
University of Minnesota	(1916)*	87.3
Washington University	(1910)	79.5
John A. Creighton Medical College	(1909)	85.1

College	Year Grad.	Reciprocity with
LICENSED THROUGH RECIPROCITY		
University of Colorado	(1913)	Colorado
University of Pennsylvania	(1914)	Minnesota

* In 1917, on completion of a year's internship, will receive diploma dated 1916.

Vermont February Report

Dr. W. Scott Nay, secretary of the Vermont State Board of Medical Registration, reports the practical and written examination held at Montpelier, Feb. 13-15, 1917. The total number of subjects examined in was 12; total number of questions asked, 90; percentage required to pass, 75. The total number of candidates examined was 3, of whom 2 passed and 1 failed. One candidate was granted a reregistration license by examination. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Chicago College of Medicine and Surgery	(1915)	76.9
Tufts College Medical School	(1916)	85.4
FAILED		
Kentucky School of Medicine	(1906)	59.1

Book Notices

A MANUAL OF PHARMACOLOGY AND ITS APPLICATIONS TO THERAPEUTICS AND TOXICOLOGY. By Torald Sollmann, M.D., Professor of Pharmacology in the School of Medicine of Western Reserve University. Cloth. Price, $4.50 net. Pp. 901, with illustrations. Philadelphia: W. B. Saunders Company, 1917.

A LABORATORY GUIDE IN PHARMACOLOGY. By Torald Sollmann, M.D., Professor of Pharmacology in the School of Medicine of Western Reserve University. Cloth. Price, $2.50 net. Pp. 355, with 62 illustrations. Philadelphia: W. B. Saunders Company, 1917.

The manual, the larger of the two books, is intended for both study and reference. According to the preface:

> Pharmacology comprises some broad conceptions and generalizations, and some detailed conclusions, of such great and practical importance that every student and practitioner of medicine should be absolutely familiar with them. It comprises also a large mass of minute details which would constitute too great a tax on human memory, but which cannot safely be neglected. It is the ambition of this book to present both types of information without confusion. The matter in the larger print aims to give a connected and concise statement of the essentials of pharmacology. The smaller print need not be considered by the reader who wishes to obtain merely a general knowledge of pharmacology. It contains more detailed data for consultation. Side headings have been introduced liberally to facilitate this use.

The manual is of such broad scope that only a few of the most important subjects can be be mentioned in a review; for example, under the treatment of disease are considered the chemical and physical basis of pharmacology, the manifestations of pharmacologic actions, classification of drugs according to selective action, the administration of drugs, conditions influencing absorption, the excretion of drugs, dosage (posology), and conditions influencing drug actions. Introductory topics include pharmacy, toxicology and prescription writing. The book gives a concise description of each drug, its source and its chemical and physical properties. The pharmacologic actions of the drug are then discussed in a comprehensive and painstaking way, and the therapeutic possibilities and limitations discriminatingly indicated. Drugs of doubtful value are considered as fully as their importance warrants. The principal drug preparations and their dosages are listed. Exhaustive references to the literature are everywhere given, and for this all those interested in the study of medicine will be grateful to Dr. Sollmann. By placing the fundamentals in coarse print and the supplementary information in fine print, he has admirably succeeded in combining a manual and a reference work: The subject matter in coarse print, if considered alone, constitutes a textbook in pharmacology, while the book as a whole is practically an encyclopedia of the subject. The book is sound, contains a wealth of material well digested, and is a distinct credit to American pharmacology. The busy practitioner who wishes to know the present-day therapeutic status of any drug likely to be encountered should possess this book, as it gives an up-to-date estimate of drugs, which every practicing physician will find of direct interest and value. The time is past when the "clinical" estimate for a drug can longer be based on uncritical observations and statements handed down from book to book. Physicians who are abreast of the times must know the scientific evidence for the value of drugs, and for this they can obtain no better work than Dr. Sollmann's manual.

A Laboratory Guide in Pharmacology contains concise directions for performing experiments. In Part I the exercises include general reactions of plant constituents, pharmaceutic preparations, isolation of poisons, special tests for the more important alkaloids, glucosids, neutral principles and aromatic and aliphatic compounds and heavy metals, chemical study of the excretion of drugs in man, chemical antidotes, adsorption by colloids, selective solvents, osmosis and diffusion, effects of drugs on hemoglobin and on ferments, and many other topics. Part II is devoted to experiments on animals, and includes localization of actions, muscular contraction, perfusion experiments, the fate of drugs, and metabolism, with many subdivisions showing the effects of drugs on respiration, temperature and kidney excretion. Two sizes of type are used in the text. The more important topics are given in coarse print. These are confined strictly to the bare essentials needed by students who intend to become general practitioners of medicine, special stress being laid on the facts which have a direct practical bearing. Longer course demonstrations, etc., are introduced as optional in fine print. These are intended primarily for the instructor and investigator, and include numerous references to the literature, where more detailed information and different methods may be found. As the pharmacologist must be a chemist primarily, many of the exercises and tests described should be of distinct value to pharmaceutic and physiologic chemists, as well as to practicing physicians.

Pharmacology is one of the correlated medical sciences of recent growth, yet at the present time it stands on a firm footing. It is preeminently a laboratory and experimental subject. It can be approached in no other way. There is scarcely a branch of medical science that requires such specialized knowledge. Pharmacologic experimentation is fundamentally necessary for the development of the science of medicine, for the ultimate object of medicine is to cure disease, and the methods of attempted cure must be subjected to the most searching analysis regarding their efficiency and freedom from danger. The old days of therapeutic nihilism are past, not to return. Synthetic chemistry has been largely instrumental in accomplishing the transformation. Hosts of new drugs and chemicals are ready for therapeutic analysis. It is evident, therefore, that the pharmacologist must be a specialist, and it is equally evident that the author of pharmacology should be one who has been trained and developed as a specialist. Yet it is unfortunately true that most of the authors of pharmacologies in English are clinicians who have had early experience as pharmacists. They have had little, if any, personal experience or training in pharmacology. They are not specialists. For this reason it is a great pleasure to turn to such books as these by Dr. Sollmann, written by a man with great technical knowledge. He speaks with the authority of one with extensive personal experience. His discrimination is therefore good, his criticisms just, and his conclusions justifiable.

Medicolegal

Validity of Laws Fixing Minimum Percentage of Butter Fat for Ice Cream

(Hutchinson Ice Cream Co. et al. vs. Iowa. Crowl vs. Pennsylvania. (U. S.), 37 Sup. Ct. R. 28)

The Supreme Court of the United States, in these two cases, which were argued together, affirms judgments of the state supreme courts upholding state statutes which prohibited the sale of ice cream containing less than a fixed percentage of butter fat, the Iowa statute making 12 per cent. the required minimum, and the Pennsylvania statute 8 per cent. Mr. Justice Brandeis delivered the opinion of the court, which says that the statutes were assailed as invalid under the fourteenth amendment to the federal constitution. The plaintiffs in error (defendants) did not contend that the particular percentage of butter fat set by Iowa and Pennsylvania were so exacting as to be in themselves unreasonable. Thirteen other states have by similar legislation set 14 per cent. as the minimum, and five other states 12 per cent.; only eight states have fixed a percentage as low as Pennsylvania, and the United States Department of Agriculture has declared 14 per cent. to be standard. The main objection urged was this: To require that ice cream, in order to be legally salable, must contain some butter fat is a regulation so unreasonable and arbitrary as to be a deprivation of property without due process of law and a denial of the equal protection of the laws. To support this contention the following trade facts were shown: The ice cream of commerce is not iced or frozen cream. It is a frozen confection—a compound. The ingredients of this compound may vary widely in character, in the number used, and in the proportions in which they are used. These variations are dependent on the ingenuity, skill and judgment of the maker, the relative cost at a particular time or at a particular place of the possible ingredients, and the requirements of the market in respect to taste or selling price. Thus, some Philadelphia ice cream is made of only cream, sugar and a vanilla flavor. In making other Philadelphia ice cream the whites of eggs are added; and according to some formulas vanilla ice cream may be made without any cream or milk whatsoever; for instance, by proper manipulation of the yolks of eggs, the whites of eggs, sugar, syrup and the vanilla bean. All of these different compounds are commonly sold as ice cream, and none of them is necessarily unwholesome. Plaintiffs in error contended that as ice cream was shown to be a generic term embracing a large number and variety of products, and the term as used does not necessarily imply the use of dairy cream in its composition, it is arbitrary and unreasonable to limit the ice cream of commerce to that containing a fixed minimum of butter fat. But the legislature may well have found in these facts persuasive evidence that the public welfare required the prohibition enacted. The facts show that, in the absence of legislative regulation, the ordinary purchaser at retail does not and cannot know exactly what he is getting when he purchases ice cream. He presumably believes that cream or at least rich milk is among the important ingredients; and he may make his purchase with a knowledge that butter fat is the principal food value in cream or milk. Laws designed to prevent persons from being misled in respect to the weight, measurement, quality or ingredients of an article of general consumption are a common exercise of the police power. The legislature defines the standard article or fixes some of its characteristics, and it may conclude that fraud or mistake can be effectively prevented only by prohibiting the sale of the article under the usual trade name, if it fails to meet the requirements of the standard set. Laws prohibiting the sale of milk or cream containing less than fixed percentages of butter fat present a familiar instance of such legislation. This court has repeatedly sustained the validity of similar prohibitions. The conviction here under review was for selling the "compound" as ice cream, so that this court is not called on to determine whether the state may, in the exercise of its police power, prohibit the sale even of a wholesome product, if the public welfare appears to require such action

—and if, as here, interstate commerce is not involved. Nor is it necessary to consider whether the statutes are or are not assailable as health measures; and on this the court expresses no opinion.

Speculation as to Cause of Condition Not Tolerated

(Anton vs C., M. & St P. Ry. Co. (Wash), 159 Pac. R. 115)

The Supreme Court of Washington affirms a judgment of nonsuit, on the ground that the testimony was insufficient to hold the defendant to a liability for the plaintiff's condition, where he claimed that tuberculous shoulder joint was caused by a fall which he had while working for the defendant as a section hand. The court says that it had the established facts that tuberculosis coming from a bruise is the unusual, rather than the usual, thing, and that it often develops without a known cause; and a controversy of opinion, one surgeon saying that he would assume as the most likely thing in the world that the fall caused the injury, and another saying that the theory of the plaintiff was impossible. While the law permits expression of opinion, when doctors disagree in their diagnosis and prognosis in a field in which the reliance of laymen must depend on professional skill and learning in an obscure science, it will not tolerate speculation as to the cause of a condition That must be proved with reasonable certainty The court is not to be understood as limiting the extent or scope of medical expert testimony or proper prognosis based on established facts. That is a very different thing from what was attempted in this case, which was to fix a proximate cause for a disease becoming suddenly aggressive seven months after a slight injury, and which may have developed from some other cause or without a traumatic intervention. The law will note and compensate for consequences of injuries reasonably certain to occur, and will base its judgments on opinion evidence, but the court knows of no cases holding that the proximate cause of a disease can be traced by opinion evidence to an accident when the testimony, considering the lapse of time and the nonobservation of medical men, goes no further than to show that the injury might have been a sufficient cause The disease with which the plaintiff was afflicted was not shown to be the usual, natural or probable consequence of the slight injury sustained The contrary was shown.

Roentgenographic Plates Alone Not Evidence

(Bartlesville Zinc Co vs Fisher (Okla), 159 Pac R. 476)

The Supreme Court of Oklahoma reverses a judgment obtained by Plaintiff Fisher, for personal injuries, on account of error in the admission in evidence of certain roentgenographic plates tending to prove the existence of certain physical defects in and about the bony structure of his head The evidence afforded to identify the plates was given by a physician who testified that from an examination of the plaintiff, based on symptoms related to him, he was unable to find the cause of the plaintiff's trouble, and sent him to another physician to have a roentgenographic plate made, and that he was not present when the plates were made. The witness further testified that his evidence, relative to the plaintiff's injuries, was based on the information divulged by these plates The expert who made the plates did not testify, nor did anyone who was present at the time the plates were made The court says that the plates were not admissible in evidence, nor could they be, until they were properly identified or shown to have been made by trustworthy instruments properly used by a person skilled in making, reading and interpreting such plates, and further shown to be correct representations of the bony structure of the plaintiff's head The admission of roentgenographic plates in evidence rests fundamentally on the theory that they are the pictorial communication of a qualified witness who uses this method of conveying to the jury a reproduction of the object of which he is testifying; this being true, the roentgenographic plates must be made a part of the testimony of some qualified witness, and the witness should qualify himself by showing that the process is known to himself to give correct representations, and that it is a true representation of such object.

Society Proceedings

COMING MEETINGS

American Medical Association, New York, June 4 8.

American Academy of Medicine, New York, June 4 5.
American Association of Anesthetists, New York, June 2.
Am. Assn. of Genito Urinary Surgeons, Rochester, Minn , May 21 23
Am Climatological and Clin Association, Lakewood, N. J., May 29 31.
American Dermatological Association, Cincinnati, May 24 26
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28 30
Am Laryn , Rhin. and Otol Society, Niagara Falls, Can , June 1 2
Am. Medico Psychological Association, New York, May 29 June 1.
American Neurological Association, Boston, May 21-23.
Am Ophthalmological Society, Virginia Hot Springs, May 29-30.
American Orthopedic Association, Pittsburgh, May 31 June 1
American Otological Society, Atlantic City, May 29 30
American Pediatric Society, White Sulphur Springs, May 28 30.
American Proctologic Society, New York, June 4 5.
American Psychopathological Association, Boston, May 24.
American Radium Society, New York, June 4.
American Society of Tropical Medicine, New York, June 4 5.
American Surgical Association, Boston, May 31 June 2
American Therapeutic Society, New York, June 1-2.
Conference of State & Prov Bds of N Amer., Washington, May 30 31
Connecticut State Medical Society, New Haven, May 23 24
Florida Medical Association, Atlantic Beach, May 18 19
Maine Medical Association, Portland, June 12 13
Massachusetts Medical Society, Boston, June 12 13.
Missouri State Medical Association, Springfield, May 14 16
National Assn. for the Study of Epilepsy, Skillman, N. J., May 28 29.
New Hampshire Medical Society, Concord, May 16
Ohio State Medical Association, Springfield, May 14 16.
Oregon State Medical Association, Portland, June 28 30
Rhode Island Medical Society, Providence, May 31
South Dakota State Medical Association, Yankton, May 28 30.
Washington State Medical Association, Spokane, June 17 19.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Public Health, Boston

April, VII, No 4

1 Death Rates in Old and Young States. T. D Tuttle, Seattle —p 359
2 Study of Application of Score System to Sanitary Quality of Public Water Supplies in New York State T. Horton and E S Chase, New York —p 380
3 Bacillus Coli in Milk, Preliminary Report. F. A. Baldwin, St. Louis —p 391
4 Report of Committee on Sanitary Control of Waterways. H. P. Eddy and Others —p 407
5 Report of Committee on Refuse Collection and Disposal. S. A Greeley and Others —p 412.
6 Progress Report of Committee on Venereal Diseases. W F. Snow and Others —p 414
7 Method of Distributing and Collecting Diagnosis Outfits for Bureau of Laboratories in Cleveland. R G Perkins, Cleveland —p 416

Annals of Surgery, Philadelphia

April, LXV, No. 4

8 Lightning—Some of Its Effects C F Hegner, Denver —p 401
9 Spinal Cord Surgery; Report of Cases H Neuhof, New York —p 410
10 *Treatment of Wound Infection by Peroxid Phenol Solutions J O'Conor, Buenos Aires —p 438
11 Case of Angioneurotic Edema with Visceral Crises W L Duffield, Brooklyn —p 445
12 Case of Stab Wound of Deep Epigastric Artery. P G Skillern, Jr , Philadelphia —p 450
13 Case of Retroperitoneal Hernia into Duodenal Fossae. P. I Nixon, San Antonio, Texas —p 456
14 Isolated Abscess of Liver Complicating Appendicitis H O Bruggeman, Fort Wayne, Ind —p 462
15 *New Operation for Procidentia Uteri W. T. Helmuth, New York —p 469.
16 Gross Pathology of Median Bar (Prostate) Formation. A Randall, Philadelphia —p 471
17 *Hemangioma Cavernosum of Bone; Report of Case. J. M Hitzrot, New York —p 476
18 Chronic Medullary Abscess of Long Bones, Report of Cases W M Brickner, New York —p 483
19 Treatment of Fractures of Femur, Especially in Old G. T Vaughan, Washington, D C —p 491.
20 Fractures Through Neck of Astragalus. A. H. Montgomery, Chicago —p 495.
21 Supernumerary Bones of Foot; Roentgen Ray Study. S Kleinberg, New York.—p. 499.

10. Treatment of Wound Infection.—A further report is made by O'Conor of the good results which he has obtained by treating desperate cases of infected railway wounds by four hourly irrigation with hot peroxid solution (2 ounces to the liter) followed instantly by hot phenol lotion (½ ounce to the liter), and the application of hot perchlorid of mercury fomentations (wrung dry). As to the best method of drainage, he recommends that, when the general symptoms, as indicated by elevation of pulse and temperature, and coated tongue, are combined with a foul discharging wound, ether should be administered, a tourniquet applied well above the lesion, and four to six incisions made into parts in which fluctuation or bogginess is indicated on digital palpation, always carrying one or two such incisions into, or from, the original wound. Next carefully inspect the wound and make digital pressure all round exterior of wound; if any leaking into cavity is observed, a closed forceps or director is pushed into track, and secondary collection located, a direct incision is made into the latter, and if there is no fear of anatomic sacrilege, there ought to be no hesitation in extending this incision in such a manner as to throw pocket, sinus and original wound into one open chasm. The cardinal factor in this treatment is the conversion of a septic cavity or cavities into one large open sore, and, O'Conor says, in nine cases out of ten, if this is properly done, and followed by four hourly irrigation with hot "peroxid phenol" lotions and hot fomentations, with absolute rest on a splint, the onset of repair is only a matter of hours, or at most a few days. When feasible, submersion in warm peroxid lotion, once or twice daily, is a useful adjunct.

15. **New Operation for Procidentia Uteri.**—After amputation of the cervix, and repairing the perineum, Helmuth opens the abdomen in the median line as usual. The operation proceeds now as in the usual hysterectomy, the round ligaments, broad ligaments and fallopian tubes being severed, and the peritoneum sewed down to the attachment of the bladder and around the cervix. The next step Helmuth believes to be original. The uterus is split longitudinally downward, to the point where the bladder is attached to the cervix, and the endometrium dissected out, from each cut section. Two incisions are made through the aponeurosis and body of the rectus muscle, and through the peritoneum; each incision being distant one-half inch from the central incision through the rectus muscle, and each running in a direction parallel to it (the central incision). Each of these incisions should be large enough to permit one segment of the bisected fundus to be drawn through it. The central incision through the rectus muscle and peritoneum is sutured, and the two parts of the uterus are brought together, being then sewn over the now united aponeurosis and muscle. The skin and connective tissue are closed in after the usual fashion, over the fixed fundus of the uterus.

17. **Hemangioma Cavernosum of Bone.**—Hitzrot's patient, man, aged 25, complained of pain in the right shoulder, with some swelling about the joint. He dates his illness to an injury received six years ago while playing basket ball. This pain, etc., persisted for four months. Four years later, the pain reappeared in the shoulder after some unusual exertion and at this time the pain was chiefly evident on attempts to use the arm. Following this attack there was crepitus in the joint. This second attack was also relieved by baking and salicylates. Off and on since then the patient has suffered from slight pain in the shoulder joint following active use of that joint, and this pain was always relieved by salicylates. Examination: right deltoid prominent; tenderness over upper end of humerus not definitely localizable to any one spot; irregular mass, hard in character, attached to upper end of bone; distinct crepitation and pain in the joint when the arm was abducted against resistance. Roentgenogram showed a tumor mass composed of a bony shell with bony trabeculae dividing it into numerous cyst-like compartments which occupied the upper end of the humerus from the head well down to the deltoid attachment. The tumor seemed to spring from the outer surface of the bone, and except for the intertrochanteric region, did not seem to involve the shaft. The tumor was chiseled away from shaft of humerus, from greater tuberosity and from its attachment to the head, and removed in practically one piece with the underlying periosteum. The cavity in the head was scraped thoroughly and a small sequestrum surrounded by altered blood clot was removed. The surrounding shaft of the bone and the greater tuberosity presented a slightly eroded appearance, but was otherwise practically normal. The cavity in the head was then widened, and a piece of the deltoid attached to the clavicle was placed in the cavity to fill it, and sutured there. Pathologic report: cavernoma of bone with organization of extravasated blood.

Boston Medical and Surgical Journal

April 19, CLXXVI, No. 16

22 Treatment of Pernicious Anemia. R. C. Larrabee, Boston.—p. 553.
23 Retroversion of Uterus; Its Etiology and Rational Treatment. J. T. Williams, Boston.—p. 558.
24 Point Scale for Measurement of Intelligence in Adolescent and Adult Individuals. R. M. Yerkes, Boston, and C. S. Rossy, New York.—p. 564.

Canadian Medical Association Journal, Toronto

April, VII, No. 4

25 War Nephritis. R. D. Rudolf, Toronto.—p. 289.
26 Abdominal Wounds as Seen at Casualty Clearing Station. E. Archibald.—p. 298.
27 War Surgery. D. Hingston.—p. 307.
28 Subacute Combined Sclerosis. G. S. Mundie and R. J. Erickson, Montreal.—p. 311.
29 *Duodenal Ulcers in Infancy. A. Brown, Toronto.—p. 320.

29. **Duodenal Ulcers in Infancy.**—Brown cites the case of a child admitted to the hospital on three successive occasions with a diagnosis of marasmus or atrophy, and on the final admission, duodenal ulcer. His age on the first admission was 3 months and just previous to death, 5 months. During the previous three months he had not thrived, and suffered alternately from constipation and diarrhea. The stools gradually reverted from the loose green type to those of a soapy character. One day the child passed four dark colored, almost black stools of a tarry consistency. The test for occult blood was strongly positive. He was considerably weaker and more pale, he was listless, more dehydrated, with respirations of 76 and pulse 104—a provisional diagnosis of duodenal ulcer with hemorrhage was made at this juncture. Almost immediately the duodenal catheter was passed and about 5 c.c. of a bright yellow bile, filled with many brown flecks and numerous bright red flakes and streaks was obtained. This material showed a positive guaiac and microscopic test. A blood examination at this period revealed a severe degree of secondary anemia, the red cells being but 2,900,000 and the hemoglobin 38 per cent. A blood transfusion was immediately performed and 150 c.c. of the father's blood introduced. Following transfusion the infant passed two fairly large currant jelly stools and died from the effects of the hemorrhage eight
hours later. Postmortem examination showed the orgcream
be normal with the exception of the stomach and dur butter
the former contained a coffee-ground material, whilaese facts
was filled with 1½ ounces of blood clot of ~ required the
consistency due to the admixture of mucous. the absence of
from the pylorus was a fairly large "punched at retail does
a shelving base. Directly opposite this larger when he pur-
smaller ones apparently in the process of lt cream or at
margins were much more indurated and presendients; and he
points. Both of these measured approximateit butter fat is
ys designed to

Colorado Medicine, Denver to the weight,

April, XIV, No. 4 cle of general

30 Cesarean Section; Operation of Choice. L. H. e power. The
rado Springs.—p. 102. s some of its
31 Immediate Submucous Operation for Traumati ud or mistake
Septum. O. Orendorff, Canon City.—p. 108. the sale of the

Illinois Medical Journal, Chicag s to meet the

April, XXXI, No. 4 ing the sale

32 Appendicitis Complicating Pregnancy. A. P. Hei entages of
—p. 215. gislation.
33 Complement Fixation Test in Diagnosis and Determ similar
Cure of Gonorrhea. L. D. Smith, Chicago.—p. 222. sell-
34 Clinical Laboratory, Roentgen-Ray and Necropsy Findings not
Obscure Intestinal Disorder. H. M. Francis, Wood ise
p. 228.
35 Surgical Care of Trachoma and Its Sequelae. E. E. Edmond
Mt. Vernon.—p. 230.
36 Hemorrhoids with Reference to Modern Ideas. R. H. Barnes,
St. Louis.—p. 231.

37 Pyelotomy vs. Nephrotomy. J. Welfeld, Chicago.—p. 233.
38 Pneumonia. O. O. Hall, Milford.—p. 234.
39 Indications and Results in Radical Mastoid Operation; Résumé of Twenty-Six Cases. C. B. Welton, Peoria.—p. 235.
40 Tuberculosis of Hip in Children. E. L. Hendricks, Lanark.—p. 238.
41 Modern Treatment of Diabetes. C. H. Lovewell, Chicago.—p. 240.
42 Alcoholism; Its Psychology and Its Rational Cure by Psychotherapy. A. H. Burr, Chicago.—p. 245.
43 Matters Medical Pertaining to Marriage, or Physician as Educator. A. J. Butner, Harrisburg.—p. 247.
44 Few Minor Ailments Potentially Important. D. S. Booth, St. Louis.—p. 260.
45 Etiology and Diagnosis of Acute Endocarditis in Children. G. H. Withers, Chicago.—p. 263.
46 Survival of Superstition as Found in Practice of Medicine. J. M. Beveridge, Oregon.—p. 267.

Journal of Biological Chemistry, Baltimore

April, XXIX, No. 3

47 Partition of Nonprotein Nitrogen in Blood of Fresh Water Fish. D. W. Wilson and E. F. Adolph, Fairport, Iowa.—p. 405.
48 Creatin and Creatinin in Whole Blood and Plasma. D. W. Wilson and E. D. Plass, Baltimore.—p. 413.
49 *Studies in Bence-Jones Proteinuria. A. E. Taylor, C. W. Miller and J. E. Sweet, Philadelphia.—p. 425.
50 Determination of Cholesterol in Blood. W. R. Bloor, Boston. p. 437.
51 Diurnal Variations in Creatin Excretion. W. Denis, Boston. —p. 447.
52 Direct Determinations of Permeability. R. P. Wodehouse, Cambridge, Mass.—p. 453.
53 Microtitration of Ammonia, Observations on Normal Human Blood. G. D. Barnett, San Francisco.—p. 459.
54 Studies on Cholesterol. Influence of Bile Derivatives in Bloor's Cholesterol Determination. G. Luden, Rochester, Minn.—p. 463.
55 Hourly Elimination of Certain Urinary Constituents During Brief Fasts. I. Neuwirth, New York.—p. 477.
56 Corn as Source of Protein and Ash for Growing Animals. A. G. Hogan, Manhattan, Kan.—p. 485.
57 *Chemical Nature of Vitamins. Structure of Curative Modifications of Hydroxypyridines. R. R. Williams, Washington, D. C. p. 495.
58 Dietary Deficiencies of White Bean, Phaseolus Vulgaris. E. V. McCollum, N. Simmonds and W. Pitz, Madison, Wis.—p. 521.

49. **Bence-Jones Proteinuria.**—The only noticeable abnormality of the viscera in the case of myeloma studied by the authors was several old healed lesions of the lungs. The pleural cavities contained considerable clear straw-colored fluid. The long bones were not affected; but in the bones of the pelvis, ribs and vertebrae the marrow occupied a much greater space than usual, with marked thinning of the walls; the body of the sacrum was so spongy as scarcely to resemble bone at all, and the bony structure of the ribs in some places was not over 0.5 mm. in thickness. The subsequent histologic examination showed undoubted myeloma, a fact of interest, since the Roentgen ray had indicated no osseous abnormality. The urine contained 3.6 per cent. of Bence-Jones protein and there was also considerable albumin. The pleural fluid contained 0.11 per cent. Bence-Jones protein. The blood gave a well marked test; the protein appeared to amount to about 0.2 per cent. A method of separating the protein and of preparing a protein-free urine is also described. The authors believe that the protein is no proteose, but a higher protein of definite biologic stamp of endogenous origin, and might be derived either from the tumor cells of the myeloma, or produced through an interrupted or aberrant synthesis of some normal body protein.

57. **Chemical Nature of Vitamins.**—Preliminary experiments described by Williams which suggest that nicotinic acid exist in a betain form and that the curative properties Funk's vitamin fractions of yeast and rice polishings may have been due in part to this isomeric form of nicotinic acid polymer or simple derivative of it.

Journal of Experimental Medicine, Baltimore

April, XXV, No. 4

*Passage of Neutralizing Substances from Blood into Cerebrospinal Fluid in Poliomyelitis. S. Flexner and H. L. Amoss, New York.—p. 499.
60 *Neutralization of Virus of Poliomyelitis by Nasal Washings. H. L. Amoss, New York, and E. Taylor, Burlington, Vt.—p. 507.
61 *Relation of Meninges and Choroid Plexus to Poliomyelitic Infection. S. Flexner and H. L. Amoss, New York.—p. 525.
62 *Survival of Poliomyelitic Virus for Six Years in Glycerol. S. Flexner and H. L. Amoss, New York.—p. 539.
63 *Cultivation and Immunologic Reactions of Globoid Bodies in Poliomyelitis. H. L. Amoss, New York.—p. 545.
64 *Pathologic Effects of Streptococci from Cases of Poliomyelitis and Other Sources. C. G. Bull, Baltimore.—p. 557.
65 *Serum Treatment of Twenty-Six Cases of Epidemic Poliomyelitis. H. L. Amoss and A. M. Chesney, New York.—p. 581.

59. **Neutralizing Substances in Poliomyelitis.**—Flexner and Amoss found that the cerebrospinal fluid taken very early and quite late in the course of acute poliomyelitis exhibits no neutralizing action on filtered poliomyelitic virus. The blood serum on the sixth day of the disease already contains the neutralizing principles. The injection of sterile horse serum into the cerebrospinal meninges in monkeys increases their permeability, so that they permit the immunity neutralizing principles passively injected into the blood to pass into the cerebrospinal fluid. The passage in passively immunized monkeys takes place during a relatively brief space of time and apparently only while the inflammatory reaction produced by the horse serum is at its height. It is established for monkeys and rendered probable for man that the intraspinal injection of immune serum in poliomyelitis is curative. In monkeys normal serum exerts no such action, and at present nothing can be stated definitely regarding the therapeutic effect of normal serum in man except that probably any benefits which may arise from its employment would be attributable not to the action of the serum as such, but to the escape of circulating immunity principles in the blood made possible by the aseptic inflammation set up by it in the meninges. As the immunity principles appear in the blood only after several days, and the reported favorable effects of the immune serum treatment relate to the first days of illness, the employment of normal serum is thus not indicated, while that of an immune serum is.

60. **Neutralization of Virus of Poliomyelitis.**—The results of fifty-six experiments by Amoss and Taylor showed that washings of the nasal and pharyngeal mucosas possess definite power to inactivate or neutralize the active virus of poliomyelitis. This power is not absolutely fixed, but is subject to fluctuation in a given person. Apparently inflammatory conditions of the upper air passages tend to remove or diminish the power of neutralization. But irregularities have been noted, even in the absence of these conditions. The neutralizing substance is water soluble and appears not to be inorganic; it appears to be more or less thermolabile, and its action does not depend on the presence of mucin as such. It is suggested that the production of healthy carriers through contamination with the virus of poliomyelitis may be determined by the presence or absence of this inactivating or neutralizing property in the secretions.

61. **Mechanism of Defense in Poliomyelitis.**—The importance first of the meningeal choroid plexus complex in preventing infection with the virus of poliomyelitis, and next of immune serum in offsetting the disadvantages and dangers arising from defects in the mechanism, is apparent, as is the bearing of the experiments reported by Flexner and Amoss on the serum therapy of epidemic poliomyelitis. The meningeal choroid plexus complex, normally is capable of excluding the circulating virus from the central nervous organs. The complex plays a part also in preventing infection from virus present on the nasal mucosa. Aseptic fluids which irritate, inflame, or even slightly alter the integrity of the meninges and choroid plexus, diminish or remove their protective function. Normal monkey or horse serum, isotonic salt solution, and Ringer and Locke's solutions, when injected into the meninges, promote infection with the virus of poliomyelitis introduced into the blood, the nose, or the subcutaneous tissues. Simple lumbar puncture and the withdrawal and return of the cerebrospinal fluid in normal monkeys, hemorrhage having been absolutely avoided, do not promote infection with virus injected into the blood; while the replacement of the cerebrospinal fluid of one monkey with that of another does in some instances lead to infection. Simple lumbar puncture attended with even very slight hemorrhage opens the way for the passage of the virus from the blood into the central nervous tissues, and thus promotes infection.

Hence, changes in the structure or function of the meningeal choroid plexus complex, too slight to be detected by chemical and cellular changes in the cerebrospinal fluid or by morphologic alterations, suffice to diminish in an essential manner its protective powers. Of all the irritant fluids tested by the authors, immune serum alone injected into the meninges is not succeeded by infection from the virus introduced into the blood. The protective property of the immune serum is capable of overcoming the promoting action of normal monkey and horse serum and the other irritants mentioned.

62. **Survival of Poliomyelitic Virus.**—In the course of investigations on poliomyelitis conducted at the Rockefeller Institute, specimens of nervous tissues from human beings and monkeys, the subjects of poliomyelitis, have been regularly put aside in 50 per cent. glycerol in the refrigerator, the temperature of which has been kept at approximately 4 C. Some of the tissues were set aside in 1910, and others later. Flexner and Amoss recently tested certain specimens for activity and ascertained that monkeys may be infected with samples 6 and 4 years old. The symptoms and lesions caused by this virus are identical with those produced by that contained in the more recently collected spinal cord and medulla. The authors suggest that this power of survival under adverse conditions may not be without significance in respect to the recrudescence of poliomyelitis in a given locality and after a lapse of years.

63. **Globoid Bodies in Poliomyelitis.**—See editorial "Bacteriology of Poliomyelitis," The Journal, April 14, 1917, p. 1122.

64. **Streptococci from Poliomyelitis.**—See editorial, "Bacteriology of Poliomyelitis," The Journal, April 14, 1917, p. 1122.

65. **Serum Treatment of Epidemic Poliomyelitis.**—Amoss and Chesney describe in some detail the method used and the results attained in twenty-six cases of acute poliomyelitis treated with human serum from recovered and convalescent cases of the disease. Of twelve cases which showed paralysis at the time serum was first given, one patient died ten hours after the serum was given, two patients suffered some degree of extension of the paralysis, while the remaining nine showed no extension of the paralysis. Of fourteen cases in which no paralysis was detected at the time serum was administered, two patients developed respiratory paralysis and died; and two others developed some degree of weakness or partial paralysis of certain muscle groups. The ten remaining cases (71 per cent.) never showed any detectable weakness. In the ten instances in which no paralysis occurred, the fever, sometimes high, tended to fall rapidly to normal, the average time of the fall being 25.7 hours. These cases demonstrate the harmlessness of the serum when introduced intraspinally under suitable conditions. The earlier in the course of the disease the serum is employed in suitable doses, the more promise there is of benefit. The question of multiple and repeated injections of the serum has not yet been worked out. In the cases here reported and especially in the group in which no paralysis existed at the time of the first injection, the pathologic process either did not progress at all, or where there was extension, as in two cases the upper segment of the spinal cord became rapidly involved, and was followed by respiratory paralysis and death. Probably in cases in which some degree of muscular weakness develops soon after the injection of serum, reinjection twelve to twenty-four hours later may be advantageous.

Journal of Pharmacology and Experimental Therapeutics, Baltimore

April, IX, No. 7

66 *Action of Strychnin in Certain Types of Cardiac Irregularities. M. I. Smith, Ann Arbor, Mich.—p. 365.
67 Endermic Reactions. Urticaria by Amins and Aromatic and Urea Derivatives. T. Sollmann, Cleveland.—p. 391.
68 Proportion in Which Epinephrin Distributes Itself Between Corpuscles and Serum in Relation to Technic of Testing for Epinephrin in Blood. G. N. Stewart and J. M. Rogoff, Cleveland.—p. 393.
69 *Pharmacology of Vagina. J. A. Waddell, Charlottesville, Va.—p. 411.

66. **Action of Strychnin in Cardiac Irregularities.**—Strychnin is shown by Smith to have a depressant action on the excised heart of the frog and the rabbit. It slows the rate, and lessens the amplitude and the irritability of the heart. In sufficient concentration it may delay or prevent the irregularities produced in the isolated heart by aconitin, by ouabain, and by occluding certain branches of the coronaries. This is shown to be due to strychnin lessening the enhanced irritability of the heart which gives rise to such irregularities. Irregularities arising from impaired conductivity (cocain irregularity), or from excessive depression of the myocardium (apocodein and ergotoxin irregularities) are aggravated by strychnin. It is suggested with the greatest reserve that strychnin may have a place in the therapy of ectopic beats originating in the ventricles.

69. **Pharmacology of Vagina.**—Waddell presents the results of a study of the excised vaginae of nonpregnant nulliparous and multiparous animals. Spontaneous rhythmic contractions are exhibited by both the circular and the longitudinal musculatures of the excised vaginae of dogs, cats, rats, rabbits, guinea-pigs, sheep, hogs and cows, when suspended in oxygenated Tyrode's solution at body temperature. The application of drugs produces on the circular musculature of the excised vagina the same response as on the longitudinal. The excised vaginae of rabbits, dogs, hogs and sheep are stimulated by epinephrin, while those of cats, rats, guinea-pigs and cows are depressed. Accordingly, the motor sympathetic innervation is the more powerful in the former species; and the inhibitory, in the latter. After ergotoxin, the excised vagina of the rabbit is depressed, not stimulated, by epinephrin, so that the organ in this animal possesses an inhibitory sympathetic innervation as well as a motor. By nicotin, the excised vagina of the rabbit is stimulated and then depressed, a phenomenon which confirms Keiffer's demonstration of ganglion cells within the wall of the organ. Arecolin and physostigmin stimulate the excised vagina, which is in agreement with Falk's conclusions as to the presence of a parasympathetic innervation. Pilocarpin usually stimulates the excised vagina, but it at times produces depression in that of the rat. Atropin antagonizes the stimulating action of arecolin, physostigmin, and pilocarpin on the excised vagina. Scopolamin either produces no effect or a depressant one on the excised vagina. Ergot and hydrastis increase the amplitude of contractions but produce little change in the tone of the excised vagina. Morphin, cocain, pituitary extract, and barium chlorid stimulate the excised vagina. The excised vagina of the nonpregnant animal reacts to drugs, in most instances, like the uterus of its species.

Kansas Medical Society Journal, Topeka

April, XVII, No. 4

70 Recurring Dermatitis of Face, with Associated Atrophic Changes in Affected Areas. R. L. Sutton, Kansas City, Mo.—p. 91.
71 Indian Medicine Man. F. L. McDaniel, Osawatomie.—p. 95.
72 Bone Graft vs. Plate. H. L. Charles, Atchison.—p. 96.
73 Possible Rôle of Glands with Internal Secretion in Problems of Psychiatry. F. A. Carmichael, Osawatomie.—p. 98.
74 Iritis. O. R. Wolfe, Beverly.—p. 101.

Medical Record, New York

April 21, XCI, No. 16

75 Yellow Jacket and Flowery Kingdom. S. E. Jelliffe, New York. p. 663.
76 Pneumonia Analysis of Fifty-Three Cases. H. M. Moses, Brooklyn.—p. 666.
77 Constipation of Rectal Origin. W. F. Burrows and E. C. Burrows, New York.—p. 671.
78 Cervical Glandular Enlargements in Children. I. W. Kahn, New York.—p. 672.
79 Nonsurgical Treatment of Strictures. S. Steiner, New York. p. 676.
80 Case of Imperforate Anus. B. P. Thom, New York.—p. 678.
81 Modern Belief in Spontaneous Generation. C. L. Redfield, Chicago.—p. 679.
82 Available Means of Organization for National Service Among Medical Women of United States. M. S. Macy, New York. p. 681.

Michigan State Medical Society Journal, Grand Rapids

April, XVI, No. 4

83 *Adhesions of Pelvic Colon. J. T. Case, Battle Creek.—p. 145.
84 Evolution of Anesthesia. W. H. Dodge, Hancock.—p. 152.
85 Radial Cholesterin Stone in Gallbladder Surgery. H. J. Vanden Berg, Grand Rapids.—p. 158.

86 Intestinal Toxemia and Intestinal Stasis C D Aaron, Detroit. p 160
87 Administration of Salvarsan in Concentrated Solution. T H Smith, Detroit —p 165
88 Hemorrhage During Latter Half of Pregnancy. A M. Campbell, Grand Rapids —p 167.
89 Errors in Diagnosis; Case and Its Lessons C W. Hitchcock, Detroit —p 170
90 Ocular Changes in Multiple Sclerosis W R Parker, Ann Arbor. p 172
91 Two Cases of Bladder Tumors; Carcinomatous Transformation of Papilloma; Medullary Squamous Celled Carcinoma L L Youngquist, Ann Arbor —p 174
92 History of Transfusion of Blood, Report of One Hundred and Fifty Transfusions R D McClure, Detroit —p. 178

83. Abstracted in The Journal, Sept. 9, 1916, p 835.

New York Medical Journal

April 14, CV, No 15

93 Historical Notes on Medical School of University of Pennsylvania, with Some Discussion of Recent Problems in Medical Teaching C. K Mills, Philadelphia —p 673 To be concluded
94 Ureteral Bougie as Aid to Diagnosis C H Chetwood, New York —p 677.
95 American Physician and Preparedness M Ashford, Fort Leavenworth, Kan —p 679
96 Early Diagnosis of Lobar Pneumonia. T. F. Reilly, New York p 681
97 Newer Aspects of Infection in Pneumonia E Steinfield, Philadelphia —p 687
98 Ritual Circumcision M S Reuben, New York —p 688
99 Administrative Control of Sick Indigents C Barker, New York p 690
100 After Treatment of Poliomyelitis A C Geyser, New York —p 692

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101 Empyema of Nasal Accessory Sinuses and Its Nonsurgical Treatment H Smith, New York —p 721
102 Historical Notes on Medical School of University of Pennsylvania, with Some Discussion of Recent Problems in Medical Teaching C K Mills, Philadelphia —p 725
103 Four Plus Wassermann D M Kaplan, New York —p 728
104 Ionization Treatment of Cancer of Eyelids G B Massey, Philadelphia —p 731
105 Artificial Pneumothorax in Pulmonary Tuberculosis S Simon, Denver —p 734
106 Successful Treatment for Pneumonia S Stern, Atlantic City, N J —p 740
107 Don'ts in Proctologic Practice A A. Landsman, New York — p 744
108 Drug Addiction and Harrison Antinarcotic Law. J C Densten, Scranton, Pa —p 747

Surgery, Gynecology and Obstetrics, Chicago

April, XXIV, No 4

109 *Fascia Transplantation into Visceral Defects H Neuhof, New York —p 383
110 Operative Immobilization of Spine F. De Quervain and H Hoessly, Basel, Switzerland —p 428
111 *Effect of Removal of Gallbladder E S Judd and F. C Mann, Rochester, Minn —p 437
112 *Simulation of Corpus Luteum and Retention Cysts of Ovary with Ectopic Pregnancy and Early Uterine Abortion I C Rubin, New York —p 443
113 Observations at British Base Hospital in France K Speed, Chicago —p 454
114 Odontomata C W Bonney and A G Ellis, Philadelphia — p 459
115 Tubercular Cervical Adenitis in Children W E Ladd, Boston —p 467
116 *Surgical Research of Great Omentum S L Bloomhardt, C F Andrews and R R Hetherington, Philadelphia —p 474
117 *Experimental Studies of Pancreas H H Patrie, L A Pyle and C F Vale, Philadelphia —p 479
118 *Transplantation of Ureters into Intestines J S Baird, R L Scott and R D Spencer, Philadelphia —p 482
119 *Experimental Studies in Colonic Dilatation J Alexander, J H Arnett and J A H Magoun, Philadelphia —p 484
120 Technic for Drainage or Excision of Seminal Vesicle J H Cunningham, Jr, Boston —p 487
121 Treatment of Compound Fractures of Humerus and Femur by New Apparatus H T Buckner, Seattle, Wash —p 491
122 Immediate Complete Amputation of Umbilical Cord R L Dickinson, Brooklyn —p 498
123 Permanent Nerve Block for Chronic Intractable Pain. F G Dias, Chicago —p 500
124 Spiral Wire Drainage Tube for Surgical Drainage F. A Glasgow, St Louis —p 501
125 Medicinal Treatment of Amebic Abscess of Liver. W. Allan, Charlotte, N C —p 503
126 Two Fracture Devices J E Cannaday and H D Hatfield, Charleston, W. Va —p 505

109. Fascia Transplantation Into Visceral Defects.—This is a detailed report of an extensive experimental and clinical study which confirms the statements previously made by others that the free transplantation of fascia has a wide field of usefulness. In Neuhof's work large vesical defects (up to about one-half the bladder wall) were replaced by fascia with uniform success. The immediate anatomic and functional results of replacement of extensive ureteral defects by tubes of fascia were satisfactory. Large tracheal defects (involving as much as three cartilage rings and most of the anterior aspect of the organ) were invariably replaced successfully. Large esophageal defects were replaced successfully in all experiments Perforation through the transplant invariably followed its simple implantation into gastric defects. On the other hand, smooth healing always occurred, even with very large defects, when gastro-enterostomy, with or without pyloric exclusion was added Fascia transplantation into small defects in the upper part of the small intestine was occasionally successful, succeeded more often in the lower part of the small intestine, was most successful in the large intestine In the latter, larger defects could often be satisfactorily replaced The (altered) transplant became firmly and permanently adherent to large defects made in the liver. Large defects of the pleura and diaphragm were satisfactorily replaced by fascia. Good immediate results were obtained in transplanting fascia over large defects of the lung. The immediate functional and anatomic results of transplanting fascia into large defects of the pericardium were good. Large defects of the spinal dura were satisfactorily replaced by fascia The clinical aspects are discussed in each of these groups of experiments In addition, two clinical reports on fascia transplantation into defects of hollow viscera are appended. In one it is demonstrated for the first time that a large urethral defect can be very satisfactorily and very simply replaced by fascia A similar demonstration is made in a large tracheal defect; this is the second case recorded in which fascia has been transplanted into a tracheal defect.

111. Effect of Cholecystectomy.—On the basis of experimental evidence Judd and Mann conclude that after removal of the gallbladder, all of the ducts outside the liver dilate. The sphincter at the entrance of the common bile duct into the duodenum is the chief factor in producing this dilatation After cholecystectomy, this sphincter can withstand only a small percentage of the pressure which it normally maintains When all the muscle fibers are dissected free from the intramural portion of the duct, the biliary tract does not dilate after the removal of the gallbladder.

112 Simulation of Ovarian Cysts and Ectopic Pregnancy.—From an analysis of the histologic findings in the cases personally encountered by Rubin, it appears that corpus luteum cysts and retention cysts of the ovary may simulate early terminated intra-uterine or extra-uterine pregnancy without either of these conditions actually having been present. On the other hand, it is more likely that in the majority of instances these retention cysts result secondarily through early embryonal death whether the impregnated ovum lodged within the uterus or within the tube The ovum is in these instances disintegrated and absorbed and restitution (involution) takes place without the external or internal hemorrhage which we are accustomed to see in uterine or ectopic abortion Rubin concludes that in all probability a great many nontragic ectopic pregnancies terminate in this way.

116 Surgical Research of Great Omentum.—The authors are convinced that their experimental work has shown the omentum to be quite capable of caring for gastric and intestinal perforations of varying sizes; that it can be used to advantage in anastomotic work, and is capable of preventing gangrene of large areas of intestine wall Omental adhesions are less dangerous, and therefore are preferable to adhesions between adjacent loops of intestine. In excision of hepatic tumors the omentum may be utilized to advantage to give a broad base for the hemostatic suture of the excision wound. In drainage of the common bile duct, wrap the omentum around the drain to prevent leakage. Also where a part of the common duct has been removed a new duct may be constructed of omentum. For the relief of pyloric stenosis, cut through the stenosed area and lay the omentum over the wound. Use the omentum to strengthen lines of abdominal vascular suture. In all resection of bowel and anastomosis wrap the free border of the omentum around. The omentum can be used to prevent gangrene; therefore in strangulation of the intestine from numerous conditions, as, for example, strangulated hernia, volvulus, etc., where there is doubt as to the viability of the intestine, the omentum may have one of its greatest fields of usefulness. Likewise in mesenteric thrombosis where there is doubt as to the blood supply to a certain area.

117. **Studies of Pancreas.**—The results of the authors' experiments were as follows: Four dogs in whom the duct was tripped from the uncinate process and anastomosed to the uodenum, made an uneventful and perfect clinical recovery. Necropsies after four, ten, eleven and twelve weeks, respecvely, showed that the new ducts in all were patulous and of ormal size. There was no evidence of leakage or suppuraon, and only a few adhesions were present. The main and ccessory ducts were closed in all four. Two dogs, in which he uncinate process and the head were amputated and the duct of the proximal end was stripped up and implanted into the duodenum, made a perfect recovery and showed no clinical symptoms. They were necropsied six and one-half and seven and one-half weeks after the operation and the implanted ducts were found open. There were a great many adhesions to the wound, and otherwise both were good specimens. A series of ten dogs in which the duct was stripped from the tail and used for the anastomosis, one dog died of distemper pneumonia seven days after the operation but the specimen even in that time showed a good result. Six dogs made good recoveries, clinically. Four of these dogs necropsied at five, five and one-half, seven and eight weeks after the operation, showed the old ducts closed and the implanted ducts open, except for one in which no patulous ducts could be demonstrated. There was no fat necrosis, leakage, suppuration, pancreatitis or pancreatic atrophy, and scarcely any adhesions. In two dogs killed seven weeks after operation, the main ducts were found patulous, due to the fact that the authors had neglected to suture a loop of omentum between the cut ends. The remaining three dogs of this series developed acute pancreatitis and died, one, three and five days, respectively, after operation.

118. **Transplantation of Ureters Into Intestines.**—This work would seem to confirm the conclusions reached by others, that when the periureteral lymphatics are not directly in contact with a virulent infection there is no ascending infection of the kidney. By passing the ureter through a normal opening into the intestine the authors were able to eliminate this focus of virulent infection, which gains a foothold in the intestinal wound when an abnormal opening is made. Also that valve action as the ureteral opening is of inconsequential value.

119. **Colonic Dilatation.**—The authors are of the opinion that until the causes of chronic intestinal stasis are better understood the operation of simple ileocolostomy should be abandoned, for in a large number of cases the same cause which produced the indication for the operation will also cause its failure. There is obviously no use in operating on a colon to rest it by a short circuiting operation when the entire wall has already been damaged beyond recovery. This is one more reason for giving up simple ileocolostomy: The operation should be abandoned until the cause of the intestinal stasis and the pathology which it produces are thoroughly understood.

Wisconsin Medical Journal, Milwaukee

April, XV, No. 11

127 Pediatrics and Its Relation to General Practitioner. W. R. Ramsey, St. Paul, Minn.—p. 397.
128 Myoclonus; Report of Case of Unverricht's Myoclonus Epilepticus. B. B. Rowley, Milwaukee.—p. 401.
129 Ectopic Pregnancy; Thirty-Seven Cases Treated by Operation. C. M. Echols, Milwaukee.—p. 408.
130 Some Business Aspects of Medical Career. W. E. Fairfield, Green Bay.—p. 415.
131 Chronic Colitis and Its Roentgenologic Findings. F. B. McMahon and R. D. Carman, *Rochester.—p. 419.*
132 Method for Obtaining Blood from Infants and Young Children for Wassermann Test. A. L. Kastner, Milwaukee.—p. 430.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

April 7, I, No. 2936

1 Pathology and Etiology of Infectious Jaundice Common at Dardanelles, 1915. C. J. Martin.—p. 445.
2 *Cases of Infection of Hemothorax by Anaerobic Gas Producing Bacilli. T. R. Elliott and H. Henry.—p. 448.
3 Case of Spirochetosis Icterohemorrhagica. R. Rimmer.—p. 453.
4 Cerebrospinal Meningitis. W. E. C. Dickson.—p. 454.
5 Case of Traumatic Pneumonia. J. Geoghegan.—p. 455.

2. **Hemothorax Infected by Gas Producing Bacilli.**—Infection by anaerobic bacilli according to Elliott and Henry occurs in about 10 per cent. of all cases of hemothorax from gunshot wounds of the chest that are seen in base hospitals in France. The infection leads to the development of malodorous gas which may occasionally be so abundant as to stimulate a large air pneumohemothorax, while the toxic features of the infection for the time being remain in the background. In the majority of cases the septic features are much more prominent than gas formation. The most serious of these features are jaundice, a rapid pulse (which may be the index of commencing pericarditis), and semidelirious restlessness. Less dangerous is the febrile type with a brilliant hectic flush on the cheeks. Diagnosis depends on exploratory puncture. In cases with the clinical aspect of sepsis it may be necessary to repeat the exploration on successive days, because it is a characteristic of anaerobe infection that the bacilli frequently fail to spread at once throughout the hemothorax, so that their presence is often missed at the first searching. Life can be saved in at least four-fifths of the cases if the infected blood is promptly drained away. A day's delay in putting such treatment into force, when once the infection is well established, may mean death to the patient. The clinical pictures caused by the sepsis vary widely in the individual cases of infection, but these differences cannot yet be correlated with the various forms of anaerobic bacilli that are proved to be present in each particular case.

Lancet, London

April 7, I, No. 4884

6 Paget's Disease of Nipple. W. S. Handley.—p. 519.
7 *Treatment of Severe Infected Gunshot Injuries of Shoulder and Elbow Joints. R. H. J. Swan.—p. 524.
8 *Cultivation of Malarial Parasite in Vitro. L. S. Dudgeon and C. Clarke.—p. 530.
9 Tetanus and Its Antitoxin. W. Turner.—p. 532.
10 Study of Dysentery. A. C. Inman and D. G. Lillie.—p. 533.
11 Case of Traumatic Dislocation of Knee Joint. H. Platt.—p. 534.
12 *Operative Treatment of Abdominal Aneurysm. W. I. de C. Wheeler.—p. 535.
13 Record of Sixty-One Cases of Neoplasms of Skin Treated by Roentgen Rays or Radium. A. A. R. Green.—p. 544.

7. **Treatment of Infected Gunshot Injuries of Shoulder and Elbow Joints.**—In all septic cases Swan makes it a routine practice of giving an injection of a mixed polyvalent streptococcus and proteus vaccine, and the wounded area is carefully roentgenographed to determine the nature and extent of any bony injury and the presence of metal fragments. Swan considers this preliminary injection of "antisepsis" vaccine of as much importance as the prophylactic injections of antitetanic serum, as by its means the spread of anaerobic infection is limited. If the ends of the bone entering into the formation of the shoulder or elbow joint are severely fractured, and if there is evidence of septic infection in the joint, he does not hesitate to open the latter freely, remove all completely detached fragments, and saw off the ends of the bone; the whole cavity is flushed with a forcible stream of hot, sterile water, and after arresting the bleeding, gauze is very lightly inserted into the cavity, into which are brought three or four small perforated tubes attached to a reservoir containing Dakin's solution or hypertonic saline, by which the cavity is frequently flushed. The incision is left freely open, perhaps one suture being used at the upper end. In the case of the shoulder Swan makes use of an oblique anterior incision between the deltoid and pectoralis major muscles, opening the joint at the side of the long tendon of the biceps.

If possible, the tuberosities and rotator tendons are left intact, but if the fracture involves the tuberosities they are removed, the periosteum being stripped from the upper part of the shaft and the bone divided through the surgical neck. A stab incision is then made from the posterior aspect of the joint backward to come out behind the shoulder, or the bullet track used, if conveniently placed, and a drainage tube inserted, the flushing tubes being introduced by the anterior incision. The arm is then fixed in a fully abducted and slightly flexed position.

In the elbow Swan uses a free, median, posterior incision, separating the tissues close to the bone, and, so far as possible, preserving the triceps tendinous attachment, and, of course, the ulnar nerve. The lower end of the humerus is projected from the wound and removed as may be found necessary, usually above the epicondylar line. The olecranon is removed together with the upper cartilaginous surface of the coronoid process and the cupped disk of the head of the radius. The cavity is then flushed with hot sterile water, lightly filled with gauze, and the irrigation tubes introduced. The arm is put up, flexed, and supinated, the wound being left freely open. After a few days, when granulations appear on the surface, passive movements are commenced and the forearm put up in a different angle of extension each day. As the wound fills up voluntary actions are encouraged.

8. **Cultivation of Malarial Parasite.**—A medium consisting of citrated normal saline containing varying strengths of glucose was used by Dudgeon and Clark. At first the strengths of glucose used were 2 and 5 per cent., and later two other strengths, 7.5 and 10 per cent., were tried. The strength of the sodium citrate in the medium was 1.5 per cent. A marked increase in the number of parasites in the culture tubes was noted in 9 of 31 cases of malaria. The present paper embodies the results obtained from 51 cases of clinical malaria. Using this medium, a diluted plasma with the addition of dextrose, the characteristic form which can be recognized as a plasmodium is what is termed here the "dot" form. In size it is smaller than the fine ring, the nucleus staining as a bright red dot and the protoplasm an intense blue, semilunar in shape. The appearance suggests the merozoite. Typical ring forms were infrequent. Of 10 patients whose control blood films after careful examination were considered as negative, "dot" forms were found in five cultures. Of 19 cases of malignant malaria, 4 only gave completely negative results in the citrate plasma medium, while 17 cases of the benign tertian parasite failed to grow under the same conditions. As a corollary of this, where film examinations are inconclusive as to the type of parasite, a positive culture in this medium points to malignant infection. The presence of quinin in the serum used in the culture medium influences the development of the plasmodium, the benign tertian parasite especially, in vitro.

12. **Operative Treatment of Abdominal Aneurysm.**—In three cases of abdominal aneurysm wire was introduced into the sac by Wheeler. In the first case of aneurysm of the aorta in the region of the celiac axis, operated on in August, 1910, a cage of 150 inches of Colt's wire was introduced. At the time of operation the aneurysm was thin walled and seemed ready to burst. The patient is still alive and well, at daily work in a brewery. The aneurysm has consolidated, and a loud systolic murmur present before operation has disappeared. The second patient, also reported in 1910, died in 1916, from rupture of the aneurysm, when acting as a stoker on board a patrol trawler. A wisp of 105 inches of wire was introduced in this case. The third patient was operated on in 1912 and died about a week after the introduction of the wire from rupture of the aneurysm following intestinal obstruction. A gastro-enterostomy was performed in this case as the aneurysm was obstructing the pylorus. The loop of jejunum fixed to the stomach became strangulated by pressure between the abdominal wall and the aneurysm; the consequent vomiting led to rupture of the sac.

Practitioner, London

April, XCVIII, No. 4

14 Operations for Appendicitis. J. E. Adams.—p. 301.
15 Some of Evils of Curetting. H. R. Andrews.—p. 314.
16 Scopolamin and Morphin in Labor. R. W. Johnstone.—p. 317.
17 Some Recent Vaccine Therapy. A. Fleming.—p. 322.
18 His Bundle Lesions. J. S. Goodall.—p. 328.
19 Venous Pulse. H. L. Flint.—p. 337.
20 Diseases of Nervous System. H. C. Thomson.—p. 352.
21 Treatment of Acute Lobar Pneumonia, with Special Reference to Cyanosis, Blood Pressure and Maintenance of Heart's Strength. A. Graham-Stewart.—p. 359.
22 Syphilis. G. C. Franklin.—p. 383.
23 Hematoma of Umbilical Cord at Childbirth, with Severe Hemorrhage Following Double Ligature of Cord. P. R. Cooper.—p. 389.
24 Enterospasm Following Shell Shock. P. C. C. Fenwick.—p. 391.

Archives de Médecine des Enfants, Paris

March, XX, No. 3, pp. 113-168

25 Diagnosis and Treatment of Congenital Stenosis of the Pylorus. C. G. Grulee and Dean Lewis (Chicago).—p. 113. Conclusion.
26 *Pseudomembranous Pneumococcus Infection in Nose or Throat. T. Reh (Geneva).—p. 131.
27 Metastatic Abscess Consecutive to Acute Suppurative Appendicitis. A. Androutsellis.—p. 143.
28 *Black Sweat in Girl of Fourteen. (Chromidrose et bromidrose chez une fille de 14 ans.) J. Comby.—p. 147.
29 Trychophyton Scalp Disease in Children. (Le kérion de Celse chez les enfants.) J. Comby.—p. 149.

26. **Pneumococcus Diphtheria.**—Reh reports eleven cases encountered at Geneva in which the symptoms, the false membranes and the course of the disease seemed to be unquestionably typical diphtheria, but bacteriologic examination showed them to be of pneumococcus origin. The patients were all children between 8 months and 7 years old. One had a pseudomembranous conjunctivitis, 4 a pseudomembranous sore throat, 5 membranous croup, with expulsion of the false membranes, and one had croup with the false membranes extending into the finer bronchi, and terminating fatally. All the others recovered rapidly and without complications. In treatment he advises diphtheria antitoxin as it is impossible to exclude diphtheria under two or three days, but bacteriologic examination is important for the prognosis, as pseudomembranous pneumococcosis develops like a purely local affection, without complications, and soon subsides. The sudden and stormy onset, the rapid course and usual absence of complications correspond to what we know of the ephemeral vitality and virulence of the pneumococcus. Comby insists that the false membrane cannot be distinguished in any way from that of diphtheria. No contagion developed from Reh's cases. Three of the children required intubation; in one the tube had to be introduced nine times with a total intubation of over twenty-seven days.

28 **Colored Sweat.**—Comby's patient is a girl over 14 who has never menstruated and is rather delicate and nervous, and has had leukorrhea for years. There is also a tendency to keratosis in the family. The child sweats readily; the sweat is of a disagreeable, pungent odor and the underclothing in the axillae becomes discolored with blackish stains as if stained with ink. The case resembles that reported by Blanchard in 1907 in a boy of 13 with black sweat below the eyes. A black pigment in this case was deposited around the sweat pores of the lids; it seemed to be of the nature of choroid pigment. Comby has also encountered a case of yellow chromidrosis. This was in a man of 28 who from childhood had had his flannel undervest stained yellow in the axillae. Linen and cotton did not take the stain. Chabbart in 1895 reported a case of yellow chromidrosis in a boy of 13 and related that the parents also had this yellow chromidrosis. It is possible, Comby suggests, that the leukorrhea in his case reported in detail may have some connection with the chromidrosis. He adds that chromidrosis is always regional, and may be blue, red or black, yellow or green. There is evidently some chromogen in the sweat which produces the color on oxidation from the air.

Paris Médical

March 10, VII, No. 10, pp. 197-212

30 *Experimental and Histologic Study of Shell Shock of the Internal Ear. War Deafness. (Commotion des labyrinthes.) Prenant and A. Castex.—p. 197.
31 Paralysis of the Sensory Pneumogastric. M. Vernet.—p. 202.
32 Indications for Extraction of Projectiles. A. Binet.—p. 206.
33 Successful Treatment of Comminuted Fracture of the Thigh. (Comment nous avons soigné la fracture de cuisse par coup de feu du sous-lieutenant-aviateur Jean Chaput.) Chaput and Truchet.—p. 209.

March 17, No. 11, pp. 213-228

34 *Renal Insufficiency with Gastro-Intestinal Disturbance in Soldiers on Active Service. C. Mattei.—p. 214.
35 *Paradoxic Pulse as Sign of Pericarditis with Effusion. P. Chavigny.—p. 219.
36 *The Nervous Disturbance with "Trench Foot." (Troubles objectifs de la sensibilité cutanée dans les gelures des pieds; l'acrotrophodynie paresthésique des tranchées.) J. Cottet.—p. 222.

30. **Shell Shock of Internal Ear.**—Prenant and Castex reproduced on six rabbits and ten guinea-pigs lesions similar to those induced in soldiers by the explosion of a shell near by. The cage with the animals was placed close to cannon during a cannonade and the deafness that resulted was tested with a shrill whistle, the barking of dogs, and thorough examination by all the modern otologic and galvanic tests. onditions as to the hearing were found precisely like those f the common war deafness. The middle ear seemed to escape, but the labyrinth crushed down, a kind of rupture of the cochlea. This affords ample explanation for the gravity of war deafness.

34. **Insufficiency of the Kidneys and Gastro-Intestinal Derangement.**—Mattei relates that among the 620 soldiers admitted to his service devoted to intestinal disease, there were quite a number in whom the bowel symptoms seemed to be secondary to severe derangement of the kidneys. Aside from 25 with complete renal insufficiency and from 25 with true dysentery and albuminuria, there were 61 of this group. Some of the cases ran an acutely fatal course, but in all the somnolent aspect arrested attention from the first. Recovery did not occur in any case until the urea content of the blood had returned to the normal range. When the urea content kept high, the sickness kept up, with somnolency, headache, vomiting, epistaxis and eruptions. In the few cases that came to necropsy, the digestive tract showed only minimal changes but the kidneys were badly diseased. The bacteriologic blood findings were negative but the stools presented various bacilli including the dysentery bacillus and ameba. Four-fifths of the patients had a history of some severe infectious disease more or less recently, scarlet fever, measles, diphtheria or typhoid fever. He remarks that it is difficult in his service to learn whether the men have or have not had syphilis. He explains the whole trouble as the effect of intense overwork, with sleeplessness and errors in diet, with resulting lessened resistance on the part of the bowels and some intestinal infection setting up diarrhea. The previously damaged kidneys suffer from the diversion of fluids to the intestines, and nitrogenous waste accumulates, with toxic disturbances, setting up a vicious circle with the kidneys bearing the brunt of the trouble. Treatment directed to the kidneys gave the greatest benefit.

35. **Pericarditis with Effusion.**—Chavigny insists that the paradoxic pulse is not peculiar to mediastinopericarditis, as many believe. It is encountered also with certain aneurysms, stenosis of the larynx and croup, but as a rule it is the sign of pericarditis with large effusion. He adds that pericarditis with effusion is of two forms: "those that are diagnosed but which do not exist in reality, and those which are genuine but are overlooked in the clinic." But the paradoxic pulse can almost be counted on; he found it pronounced in his four cases of pericaditis with retrocardiac effusion. Surgical measures are indicated at once. He cured two of his four patients with an emergency pericardotomy, and thinks that it might have proved effectual in the fourth case if it had been accepted. In this latter case there were none of the classic signs of the affection, the disease was latent throughout, but the paradoxic pulse gave the clue. The man was pale, with pain in the lower side of the left thorax and there was evidence of a pleural effusion but all this was not enough to explain the extreme dyspnea.

36. **Trench Frostbite.**—Cottet relates that the condition known as trench frostbite is more properly a neuritis; both arms and legs may be affected. Cold and wet affect the nerves and the trophic disturbances which result may long persist. He is convinced that there is probably always some local predisposition, and urges the necessity for seeking out the soldiers with this predisposition in order to guard them against factors liable to bring on trouble. Those predisposed have various paresthesias. Up to the knee and elbow thermic and contact sensations are dull as also the sensation for pain. This hypo-esthesia can be determined symmetrically on both legs, in segmental arrangement, and occasionally on the arms likewise. The sensation in feet and hands may vary.

Presse Médicale, Paris

March 5, XXV, No. 14, pp. 129-144

37 *Transfusion of Defibrinated Blood and of Rinsed Corpuscles after Hemorrhage. E. Hédon.—p. 129.
38 *Diagnosis and Treatment of Gastric Ulcer; Technic for Excision. V. Pauchet.—p. 132.
39 Present Status of Sphygmomanometry. (Etude comparée des méthodes générales de sphygmomanométrie.) J. A. Barré and A. Strohl.—p. 134.
40 Present Status of Knowledge of Secondary Sexual Characters. Editorial.—p. 137.

March 8, No. 15, pp. 145-152

41 *Bone Grafts. (Remarques sur la greffe osseuse.) L. Imbert.—p. 145.
42 Keloids on War Wounds. (Cheloïdes et blessures de guerre.) J. Etienne.—p. 146.

37. **Transfusion of Blood After Hemorrhage.**—Hédon recalls that in 1902 he reported successful experiments on almost exsanguinated rabbits, restoring them to clinical health by injecting saline to which he had added red corpuscles thoroughly washed from all traces of blood serum. The corpuscles were taken from the blood of an animal of the same species. On the other hand, defibrinated blood seems to possess certain toxic properties in transfusion, but his recent research has shown how this can be avoided. He remarks that direct transfusion of the whole blood is undoubtedly the preferable method, but when this is not practicable, defibrinated blood or rinsed corpuscles may prove an effectual substitute. The rinsed corpuscles method offers possibly a means to restore the purity of the blood when, in the course of intoxications or infections, it contains the toxic principles in the fluid part while the red corpuscles are still intact. In such circumstances repeated venesection is indicated, and by collecting, rinsing and reinjecting the red corpuscles, large amounts of blood can be withdrawn as the patient in this way will lose only the blood serum. Fleig has reported a case in which this blood-letting plus transfusion of corpuscles was applied several times, and each time the symptoms of uremia disappeared at once afterward, and the man left the hospital much improved. Jurevitch and Rosenberg announced in 1914 that rabbit red corpuscles rinsed in a solution of sodium chlorid and sodium citrate retain their vital properties outside the body for several hours, and exsanguinated animals recuperate under reinjection of the rinsed corpuscles while the controls all die. He adds that Peyton Rous and Turner are even more emphatic in stating that washed red corpuscles kept even for three or four weeks answer the purpose. The solution they found most favorable for human reds is a mixture of three parts of blood and two parts of an isotonic solution (3.8 per cent.) of sodium citrate and five parts of an isotonic solution (5.4 per cent.) of glucose, keeping the whole chilled, at a temperature of from 1 to 3 C.

Hédon's experimental research and clinical experience have shown that fresh defibrinated blood is quite toxic, but that this toxicity rapidly subsides. Dilution does not seem to attenuate the toxicity, but letting the blood stand for a few hours, kept chilled, seems to annul all toxicity. Addition of sodium citrate to fresh defibrinated blood in amounts sufficient to prevent coagulation reduces its toxicity but does not annul it altogether. But when the defibrinated blood is several hours old, addition of sodium citrate seems to do away with the last tendency to toxicity. The proportions in his experimental tests were 0.3 gm. of sodium citrate to 60 c.c. of the defibrinated blood. An additional precautionary measure is to start with a small hypotoxic injection, half an hour before the main injection. This seemed to be the effectual factor in the survival of two rabbits when all the controls promptly succumbed. The two rabbits had been given an intravenous injection of 6 c.c. of fresh defibrinated blood after 50 c.c. of blood had been withdrawn. Half an hour later the remainder of the defibrinated blood (45 c.c.) was injected without mishap. In conclusion he reiterates that defibrinated blood should never be used fresh, but only after it has been kept for several hours, twenty-four hours if it can be kept chilled. It should be filtered slowly through paper moistened with saline, and then diluted with physiologic solution to which 3 per thousand sodium citrate can be added. The injection should be made slowly, possibly commencing with a small injection. Hayem reported that in his experiments on dogs the red corpuscles injected in the defibrinated blood in time die off, but that this is masked by the very active blood production set in play by the injection.

38. **Gastric Ulcer.**—Pauchet insists that operative measures are indicated when a gastric ulcer becomes chronic and attacks of hyperchlorhydria return. He extols excision as the simplest and most rational method of treatment, and describes the preferable technic for this, with eight illustrations, especially when the ulcer is in the lesser curvature. In this location, gastro-enterostomy is usually futile. After recovery from the operation, the patient should be supervised both by the physician and the roentgenologist as chronic ulcer often is but one link in a chain of disturbances. It sometimes accompanies chronic disease in the gallbladder or appendix, a Lane's kink, ptosis or insufficiency of the pancreas, kidneys or liver.

41. **Repair with Bone Grafts.**—Imbert denies that a bone graft bridging a gap can produce callus enough to fill up the gap. But the gap gets filled up, nevertheless, and he ascribes this to the stimulation of callus production in the stumps by the presence of the graft. The graft serves also to direct the callus production along the desired lines. Its stimulating action is most pronounced, naturally, when the bone graft is introduced into the center of the stumps rather than when it is applied to the side.

Progrès Médical, Paris

March 10, XXXII, No. 10, pp. 77-84

43 *Topography of the Sensory Modifications in the Course of Physiopathologic Disturbances. (Constitution d'un syndrome radiculo-sympathique réflexe.) L. Lortat-Jacob, R. Oppenheim and A. Tournay.—p. 77.

44 *Hystero-Traumatism with the Physiopathologic Clinical Picture Cured by Reeducation. J. Ferrand.—p. 81.

43-44. **Sensory and Motor Disturbances of Reflex Origin.**—The disturbances described are classified as physiopathologic, the mind not being a direct factor. The disturbances are more of a reflex nature, but the reflex mechanism involved is more extensive than Charcot's conception of reflex functioning. The entire root, spinal cord and sympathetic systems may be involved, as is described, with a few typical illustrations. Ferrand reports an instructive case—already subjected to two useless operations—and emphasizes that treatment should be along the lines of that for hystero-traumatism, ranging as required from moral suasion to the most painful electric currents. By these means treatment is often crowned with success. The physiopathologic symptoms, he reiterates, are nothing new, and they do not contraindicate psychotherapy. He does not approve of this term "physiopathologic" nor of "reflex"; both indicate that hysteria is not responsible for the manifestations, while he is convinced that they fit into Charcot's frame of hystero-traumatism.

Policlinico, Rome

March 25, XXIV, No. 13, pp. 405-436

45 Means to Facilitate Medical and Surgical Work at the Front. (Proposte per il servizio sanitario chirurgico del R. Esercito al fronte.) R. Alessandri and R. Bastianelli.—p. 405.

46 Artificial Devices to Aid in Overcoming Paralysis of Peripheral Nerves. G. Dragotti.—p. 410.

47 *Tendon Plastics to Counteract Traumatic Radial Paralysis. L. Isnardi.—p. 413.

48 *Quantitative Test for Uric Acid in the Urine. A. Angiolani. —p. 415.

49 Plea for More Necropsies. (Scintille vivificatrici nella materia morta.) E. B. Lay.—p. 415.

February, Surgical Section No. 2, pp. 49-96

50 Extraction of Projectiles Under Roentgen Control. E. Fioretti. —p. 49.

51 *Mixed Tumor of Tonsil Region. B. Quarella.—p. 60.

52 Use of Pedunculated Skin Flap after Removal of Optic Endothelioma. (Sopra un caso di resezione dell'ottico, per endotelioma, mediante il mio processo modificato.) S. Calderaro.—p. 75. Commenced in No. 1, p. 40.

53 Mycosis of the Throat. (Zymonematosi indigena della gola.) G. Basile.—p. 88. To be continued.

47. **Tendon Graft for Radial Paralysis.**—Isnardi's patient had been wounded in the arm six months before, and the radial paralysis had long shown its permanent character. The hand drooped on the wrist almost parallel to the forearm and although nothing was done to conquer the paralysis yet great benefit was derived from bringing the hand up into a line with the forearm. This was accomplished by resecting 2 cm. from each extensor tendon and suturing the stumps. When an operation on the nerve is not deemed advisable, he thinks this shortening of the tendons might prove advantageous both for hand and foot. He has not been able to persuade any of the soldiers with sciatic paralysis to submit to this operation as, he says, they are afraid they will be cured too well. He remarks that the government is inspired by an unhealthy sentimentalism in allowing the soldiers the right to refuse even rational operative measures which would reduce crippling inability. At least, he declares, this refusal on their part should be taken into account in computing the pension later.

48. **Quantitative Test for Uric Acid in the Urine.**—Angiolani mixes 250 c.c. of the urine with 10 c.c. of concentrated hydrochloric acid and sets aside for twenty-four hours in a cool place. The uric acid crystals which collect are rinsed repeatedly on a filter with water acidulated with hydrochloric acid. Then 20 or 25 c.c. of a 10 per cent. solution of potassium hydrate is poured on the filter which dissolves the uric acid crystals. The filter is rinsed further with 100 c.c. distilled water which is added to the filtrate, and sulphuric acid is added until the fluid is strongly acid. The uric acid present is estimated by titration with a 4:1,000 solution of potassium permanganate, made with distilled water; 1 c.c. of this solution corresponds to 0.00857 gm. of uric acid. The simplified formula, V representing the number of cubic centimeters of the permanganate solution, is: U (per thousand) $= 0.034 \times V$. A table is given showing the proportion of uric acid that corresponds to amounts of the permanganate solution from 1 to 48.5 c.c.

51. **Mixed Tumor of the Tonsil.**—Quarella reports a case which he calculates is the eighty-ninth case on record of a tumor in the tonsil, and the first on record of a mixed tumor of embryonal origin. His patient was a girl of 15 and the tonsil tumor was removed without mishap. It measured 5.5 by 3.5 cm. and had been first noticed as a very small bunch about four months before. The bibliography is appended, classified as the tumors were benign or malignant.

Riforma Medica, Naples

March 2, XXXIII, No. 9, pp. 225-252

54 *Improved Technic for Suturing the Liver. (Nuova tecnica per la sutura del fegato.) A. L. Soresi.—p. 240.

March 10, No. 10, pp. 253-280

55 Trophic Lesions Following War Wounds. (Contributo allo studio delle lesioni del simpatico nelle ferite dei nervi *degli arti.*) L. Ferrannini.—p. 253. Commenced in No. 9, p. 226.

56 Gas Gangrene After War Wounds. (La gangrena gassosa delle ferite di guerra.) C. Oliva.—p. 256. Commenced in No. 7, p. 172.

57 Foreign Body in the Bladder. (Contributo allo studio dei corpi estranei in vescica.) T. Cattaneo.—p. 263.

54. **Suture of the Liver.**—Soresi passes the needle through a small wheel made of fine silver wire. Each wheel has eight spokes and the diameter varies from 6 to 15 mm. as desired. By thus reenforcing the suture at each end, the threads never tear out and the suture takes less time, while these little wheels never caused the least inconvenience in his experimental research and in the numerous clinical cases in which they have been applied. The silver seems to have an electrolytic action which aids in warding off infection, while silver seems the metal best tolerated by the tissues. The suturing is done with catgut. He describes a case *in detail* in which both stomach and liver had been torn, and the patient, he is sure, owes his life to the speed with which the liver could be sutured at two points with the aid of four little wheels. He gives some illustrations showing how to make the most solid knot over the wheel.

Brazil Medico, Rio de Janeiro

March 10, XXXI, No. 10, pp. 81-88

58 *Suppuration in Goitrous Thyroid. (Um caso de estrumite.) F. Luz.—p. 82.

March 17, No. 11, pp. 89-96

59 Evolution of the Schistosomum Mansoni. A. Lutz.—p. 89. Commenced in No. 10, p. 81.
60 Poisonous Fishes of Brazil. (Sobre os peixes venenosos.) O. O. R. da Fonseca.—p. 90. To be continued.
61 Heliotherapy in Brazil. A. Moncorvo, Jr. Continuation.—p. 91.

58. **Suppuration in a Goiter.**—The woman of 50 had had the goiter for twenty-five years but it had never caused any disturbance until the last few months, when, after an attack of dysentery, a large tumor developed acutely in the thyroid with a fistula into the esophagus. The tumor grew so large it threatened suffocation. Some relief was obtained when pus was expelled into the esophagus. Luz incised and drained the tumor, finding calcareous degeneration in part of the thyroid. After the patient had recovered from this he resected the left lobe of the thyroid, the seat of the tumor, and there has been no further trouble since.

Semana Medica, Buenos Aires

XXIV, No. 1, pp. 1-28

62 Problem of Painless Labor Not Yet Satisfactorily Solved. (Sobre la supresion del dolor en el parto fisiologico.) J. A. Beruti. —p. 1.
63 *Paralytic Accidents After Treatment for Rabies. C. R. Mejio. —p. 10.
64 *Leprosy in Argentine Province. E. F. Solari.—p. 15.

No. 2, pp. 29-56

65 Malaria in Argentine Army during 1915. P. J. Garcia.—p. 29.
66 Anti-Tobacco League. (La lucha antitabaquica.) E. R. Coni.—p. 34.
67 Gonococcus Perinephritic Abscess Treated with Vaccine. (Absceso perinefritico a gonococos tratado con el Haptinogeno Gono Mendez.) J. C. Mira.—p. 37.
68 *Lymphocytosis in Syphilitics. C. P. Mayer and A. C. Gourdy. —p. 39. Continuation.
69 Progress in Ophthalmology in Spain and Spanish America in the Present Century. J. Santos Fernandez.—p. 44.
70 Measles an Alimentary Arsenical Poisoning. S. V. de Castro.—p. 49.
71 Scarlet Fever an Alimentary Iodin Poisoning. S. V. de Castro. —p. 49.

63. **Paralysis After Pasteur Treatment for Rabies.**—Mejio reported six years ago ten cases of paralytic accidents consecutive to Pasteur treatment in prophylaxis of rabies. In each the symptoms suggested acute transverse myelitis in the dorsolumbar region. Since then he has encountered a number of cases but in this later series the disturbances were of the nature of peripheral neuritis, polyneuritis or acute ascending paralysis. In the total 19,800 persons who have been treated at the Pasteur Institute at Buenos Aires in his charge, twenty-four developed these paralytic accidents and in four the consequences were fatal. Only ninety-three of the many thousands treated succumbed to rabies, a total of 4.76 per thousand. He is inclined to think that the paralysis might be warded off by greater care in preparation of the virus and of the patient. The tendency is to shorten the course and this he warns may be disastrous. In seven of the eleven cases recorded here the paralytic phenomena were restricted to a limited region and soon subsided more or less completely. The region affected was exposed to the air and thus subject to chilling. The other four were the fatal cases mentioned above. One patient was a child of 6, apparently healthy a month after the Pasteur treatment. He then had a fall from a hammock and the next day his legs were paralyzed and the paralysis proved of the ascending type, fatal in two weeks. The ascending paralysis in the three other patients, all adults, developed a day or two after the close of the treatment and the men died in two or three weeks.

64. **Leprosy in Argentine Province.**—Solari states that the leprosy in the nineteen cases known in the province was imported, except in one family in which the two daughters had acquired the disease from the mother. He accepts a microbian and contagious character for leprosy, and reiterates that each leper that is isolated is a focus of contagion extinguished.

68. **Lymphocytosis in Syphilitics.**—Mayer and Gourdy's communications on this subject have been appearing weekly in the *Semana* for several months. The main points were summarized in these columns, Feb. 24, 1917, p. 668.

Siglo Medico, Madrid

March 24, LXIV, No. 3302, pp. 185-204

72 *Large Traumatic Hernia of the Diaphragm. Gil y Casares.—p. 186.

March 31, No. 3303, pp. 205-224

73 *Progressive Paralysis; Two Cases. (Dos casos de paralisis general progresiva de los enajenados.) E. M. Villapadierna.—p. 206. Commenced in No. 3302, p. 189.
74 The Pathology of Southern Spain. (Caracteristicas regionales de la patologia andaluza.) F. F. Martinez.—p. 216. To be continued.

72. **Hernia of the Diaphragm.**—The young man was under observation for over a year but did not seem to suffer chronically from the extensive protrusion of the stomach through a stab wound of the left diaphragm. The heart and pulse seemed to be normal and there was no dyspnea. The only disturbance was occasional dyspepsia with a sensation of oppression after eating. The Roentgen findings are given, showing how a sound introduced into the stomach could be seen high up in the left chest. The percussion and auscultation findings are described in detail. The diagnosis at first was traumatic hydropneumothorax but puncture was negative both for fluid and air.

73. **Progressive Paralysis.**—Villapadierna concludes his study of two recent cases and review of previous experience and the literature, with the statement that although spirochetes may be found in the brain of patients with progressive paralysis, yet the lack of favorable influence from specific treatment indicates that these spirochetes have undergone some profound biologic modification. This can be the only explanation for their nonresponse which is in such marked contrast to the behavior of the spirochetes in cerebral syphilis.

Mitteilungen a. d. med. Fakultät der k. Univ., Tokyo

December, 1916, XVI, No. 2, pp. 213-443. German Edition. Last indexed April 28, p. 1297

75 *Laking of the Red Corpuscles at Temperatures over 118 F. (Ueber das Lackfarbenwerden der roten Blutkörperchen durch die Wärme (Warmehämolyse.) H. Takaki and H. Miyazaki.—p. 213.
76 *Further Research on Paroxysmal Hemoglobinuria. T. Kumagai and I. Ito.—p. 227.
77 *Modified Micromethod for Determining Sugar Content of Blood and Urine. (Mikromethode der Zuckerbestimmung im Blute und im Harne.) G. Momose.—p. 271.
78 *Proteus Infection of Middle Ear. (Ueber den Bacillus proteus vulgaris bei chronischen Mittelohreiterungen und deren Komplikationen.) T. Wada.—p. 289.
79 *Experimental Labyrinthitis. Y. Hosoya.—p. 333.

75. **Warmth Hemolysis.**—The hemoglobin may escape from the red corpuscles under the influence of temperatures between 48 and 70 C., but the corpuscle body does not become disintegrated, and hence the process is really merely laking, not hemolysis. It occurs at temperatures too low to melt the lipoid covering of the corpuscles. The temperature, time, concentration and tendency to anemia seem to modify the process according to mathematical laws.

76. **Paroxysmal Hemoglobinuria.**—Kumagai and Ito four years ago reported their conclusions from study of twenty-five cases of hemoglobinuria, and they now supplement this with a further series of five typical cases of paroxysmal hemoglobinuria and thirty in a latent stage. The detailed findings are given in numerous tables. They confirm the assumption that autohemolysis can occur only when at the time of the chilling both autohemolysin and complement are present in the blood. The red corpuscles of those subject to hemoglobinuria are not in the least more fragile than the reds of normal persons. Among other data presented as the results of the research described, is the fact that when the autohemolysis is prevented by an anticomplement present, the latter can be removed by means of adsorption by kaolin.

77. **Micromethod for Sugar Determination.**—Momose reiterates here his previous endorsement of the advantages of his modification of the Pavy-Kumagawa-Suto reduction test for sugar in blood or urine (1913). He says that the findings are reliable even with only 1 c.c. of blood while the technic is simple and easy. An illustration is given of the little apparatus as modified from the original design. The principle of the test is to drop the fluid—after expulsion of air oxygen—into the simmering ammoniacal copper solution and titrate with hydroxylamin.

78. **Proteus Infection of the Middle Ear.**—Wada has compiled thirty cases from the literature in which the *Bacillus proteus*, alone or with other germs, was found in chronic disease of the temporal bone and its complications. In twenty-seven the brain was involved, mostly with fatal outcome. He has encountered in his own practice seven cases of proteus otitis media; four were cured by operative measures, one recovered under palliative treatment, and the others are still under treatment. In two of the cases there were intracranial complications. Most of the others had caries with cholesteatoma. He ascribes his success to his early intervention. Operative treatment is the only protection against the spread of the infectious process and dangerous complications. The proteus seems to be a secondary invader, but it assumes pronounced pathogenic properties. Typhoid serum agglutinates the proteus. The latter is pathogenic for mice, guinea-pigs and rabbits, but not at all by way of the digestive tract.

79. **Experimental Labyrinthitis.**—Hosoya devotes 110 pages to his account of his research on monkeys, dogs, cats, rabbits and guinea-pigs, inoculating them directly through a long incision below the ear, underneath the musculature of the neck. The germs used were streptococci, staphylococci, typhoid, diphtheria, colon, plague and human and bovine tubercle bacilli, besides diphtheria toxins and caustics such as chromic and trichloracetic acid, the actual cautery and bullets. The article is accompanied by six full page plates, one colored, and five double-page tables showing the details and outcome of the experiments on sixty-one animals, under twelve headings. This experimental labyrinthitis displayed a constant tendency to spontaneous recovery except in the tuberculous cases.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

February 10, I, No. 6, pp. 353-432

80 Physiologic Acetonuria. J. Koopman.—p. 366.
81 *Drugs Now Available in Holland. (Geneesmiddelen in oorlogstijd.) P. van der Wielen.—p. 374.
82 Juvenile Paralytic Dementia; Four Cases. G. C. Bolten.—p. 378.
83 Glass Syringe Crushed in Vagina. (Een niet alledaagsch ongeval.) J. A. P. de Bruyn.—p. 388.

81. **Drugs in Wartime.**—A physician has appealed to the *Tijdschrift* for information in regard to the dependability of the drugs now available in the Netherlands, including the home-made substitutes for drugs formerly supplied by importation. The reply states that it can be accepted as the rule that none of the drugs now available comply in every respect with the requirements of the Pharmacopeia. But the impurities are usually of a harmless nature; they consist mostly of sulphates, chlorids and iron, and they are present in such amounts that they are readily demonstrated by the usual tests for such substances. In a recent course of extensive research by the writer, who is professor of pharmacy and materia medica at the University of Amsterdam, he found arsenic or lead only in a single instance each. He says that the manufacturing chemists in the past few years have supplanted the chemical drugs with synthetics (*chemicälien*), and if circumstances now are forcing a return to the simple chemical drugs, this, in his opinion, will be not a calamity but quite the reverse. He suggests that it might be well to issue a "war pharmacopeia," specifying the limits permissible to impurities—or rather by-substances—in the drugs now available, with the proviso that they are to be used as medicines and not as reagents. Among other articles discussed, he says that the price of cod liver oil is not more abnormal than the prices for other products. The Norwegian dealers keep the price up, and the only remedy is for the government to pay part of the price of each cask. Under the present circumstances a cheaper fat, possibly butter, has to be ordered in place of cod liver oil. He remarks in conclusion that the price of drugs is too high even for wartimes. They pass through many hands; even the wholesale dealers are second or third in the chain, and reliable market reports are not available now.

Hospitalstidende, Copenhagen

March 14, LX, No. 11, pp. 249-272

84 *Optochin in Treatment of Pneumococcus Infection. K. K. K. Lundsgaard.—p. 249.

March 21, No. 12, pp. 273-296

85 *Five Years of Radium Treatment of Cancer. (Oversikt över resultaten av kraftbehandling vid Radiumhemmet i Stockholm 1910-1915). G. Forssell.—p. 273.

84. **Optochin.**—Lundsgaard is an ophthalmologist, and he remarks that optochin has exceptional interest for his specialty on account of the possibility of its proving effectual in pneumococcus affections of the eye, and also of the amblyopia which sometimes has followed its use internally. As the pneumococcus is responsible for serpiginous ulcer of the cornea in about 95 per cent. of all cases, optochin in local application to the cornea has scored a triumph. It induces complete anesthesia of the cornea a few minutes after instillation of the 1 per cent. solution. Leber was the first to apply it here (1913), and all agree, he says, that for ulcus corneae serpens it is superior to all other means of treatment. The results will be still better when the general practitioner hastens to instill optochin at the first suspicion of ulcer of the cornea. The instillation should be repeated every hour, night and day, at first, to obviate the breeding of a refractory strain of pneumococci. Or an optochin salve can be used. The patient should recline after each instillation. The course of treatment takes ten days on an average. There is no need for any operation on the lacrimal sac. As to optochin blindness, he has seen a case in consultation and reviews several cases from the literature. The amblyopia is generally transient; the spasm of the vessels subsides and vision returns in some cases, but not in all. Serious sequels were left in some cases, so that the apprehension as to its internal use seems to be growing. His case presented the typical picture of optochin blindness. Totally or nearly totally blind at first, central vision gradually returned but colors cannot be distinguished, and the visual field is still extremely contracted, as if one were looking through a long narrow tube. The disturbance in the eyes seems to be from spasmodic contraction of the vessels, and he suggests that it might be possible to ward this off, perhaps, by giving some vessel-dilating drug along with the optochin.

85. **Five Years Radiotherapy of Cancer.**—Forssell gives an oversight of the results of treatment of 1,015 cancer patients at the Stockholm Radiumhemmet. The cases are classified by location, stage, etc., and the technic is described in detail. The main reliance was on radium, but the Roentgen rays were often used. In 207 cases of deeply rooted inoperable cancer in different organs, primary or recurrence, a clinical cure was realized in fourteen; thirty-five were permanently improved, and eighty-six did not seem to be influenced by the radiation. But 52.2 per cent. were notably improved by the treatment. Even among those only temporarily improved, the benefit was striking although it was not permanent.

Hygiea, Stockholm

LXXIX, No. 5, pp. 193-256

86 *Cutaneous Affection Resembling Primary Syphilid in Young Woman with Inherited Syphilis. (Utslag, liknande ett syfilitiskt forsta exanthem hos en 19-årig hereditarsyfilitiker.) N. Rhodin. —p. 193.

86. **Primary Syphilid with Inherited Syphilis?**—Rhodin was unable to find anything suggesting the primary sore of syphilis in the case described, but the eruption resembled in every respect the primary cutaneous manifestations of syphilis. The young woman was known to have inherited syphilis and presented numerous stigmata. The Wassermann test was positive, and he does not venture to decide whether the eruption was a tardy manifestation of the inherited disease or a sign of newly acquired superposed infection.

Norsk Magazin for Lægevidenskaben, Christiania

March, LXXVIII, No. 3, pp. 281-392

87 Experiences with Traumatic Tetanus at Christiania Hospital. H. J. Vetlesen.—p. 281.
88 *Fatal Tetany in Young Man. S. Kjølstad.—p. 307.
89 Tuberculous Ulceration on Dorsum of Penis. (Et tilfælde av tuberkuløse saar paa genitalia.) E. Bruusgaard.—p. 311.
90 *Tardy Manifestations of Inherited Syphilis with Negative Wassermann. E. Bruusgaard.—p. 316.
91 *Complications of Gastro-Enterostomy. O. Tandberg.—p. 325.
92 *Extrapleural Operations in Treatment of Pulmonary Tuberculosis; Eleven Cases. (Erfaringer om ekstrapleural torakoplastik.) P. Bull.—p. 335.

88. **Fatal Tetany in Adult.**—Kjølstad reports a case of fatal tonic convulsions in a man of 22. He had had an attack of convulsions about once a year during the last four years, always preceded by getting chilled. The attacks lasted a day or two, beginning with pains in the stomach and cramps in the limbs. The urine was normal but there was profuse diarrhea each time after the convulsions had subsided. In the intervals his health was good and he never had dyspeptic disturbances. The patient lived in a focus of endemic goiter. He succumbed in an unusually severe attack of the tetany, under increasing dyspnea and heart weakness. Necropsy was not permitted. He had worked as usual at roadmaking that January day up to his last attack, but had complained of cold feet. The attack came on after two hours in bed and proved fatal in forty-eight hours.

90. **Tardy Congenital Syphilis.**—The boy of 10 had always seemed to be healthy except for what was assumed to be lupus of the hard palate and nasal mucosa, which had begun two years before. The Wassermann reaction was negative, the Pirquet pronounced, but under potassium iodid the lesions have almost completely retrogressed. The assumption of syphilis was confirmed by examination of the boy's three sisters who all presented tertiary syphilitic lesions and stigmata, although not previously recognized as such. The five cases reported are instances of the damage wrought by failure to recognize the manifestations of inherited syphilis when they appear first as the child approaches puberty or the twenties with nothing to suggest syphilis before.

91. **Complications of Gastro-Enterostomy.**—Tandberg has had complications develop only in two of his fifty gastro-enterostomy cases of pyloric ulcer. These patients were men of 27 or 35, and seemed to be doing well after posterior retrocolic gastro-enterostomy with a short loop. In both at the eighth or ninth day the jejunum became occluded. The occlusion was corrected by a secondary operation in one case, but in the other further complications constantly developed, compelling five supplementary operations. No permanent relief was obtained until the pylorus and jejunum were resected and Roux' technic was applied ten months after the first laparotomy. Great palliative relief had been obtained by introducing a T drain, one end in the stomach, the other in the efferent loop, the stem emerging through the abdominal wall. There was no nausea or vomiting when this drain was in place, but they returned each time when it was removed. The gastro-enterostomy and also the pylorus were found permeable at each intervention, so the cause of the persisting nausea and vomiting is still a mystery. With the T drain it proved possible to supply adequate fluids and food and thus build up the patient's strength enough to stand the final resection.

92. **Operations for Pulmonary Tuberculosis.**—Bull's eleven cases of extrapleural thoracoplasty have convinced him that the general practitioner should not fail to give his patients the chance of recovery offered by these operations in suitable cases. That is, when a unilateral or predominantly unilateral tuberculous process is not cured by rational expectant treatment, including induced pneumothorax. Good results in such cases may still be obtained with an extrapleural operation on the chest wall. He works under paravertebral or local anesthesia, after giving 0.01 gm. morphin subcutaneously an hour and again fifteen minutes beforehand. He describes the incision and the technic with which he resects nine ribs to a total of 150, 160 or 183 cm. The operation is easier on women than on men as the ribs are thinner and they can be stripped more easily than in men. Four of his eleven patients were clinically cured; two have succumbed since to the progress of the disease, and three died from postoperative pneumonia or infection or both. One patient has been much improved during the few months to date, and one seemed to be benefited at first but died two years later with symptoms of intestinal tuberculosis. The fact that four or five apparently doomed, progressing cases were arrested and the patients restored to health and happiness justifies this extrapleural resection of the posterior portion of the ribs from the tenth or eleventh up to and including the second.

Ugeskrift for Laeger, Copenhagen

February 22, LXXIX, No. 8, pp. 279-308

93 *Carbohydrate Starvation in Infants. (Lidelser hos Smaabørn opstaaet efter langvarig Ernaering overvejende med Kulhydrater.) C. E. Bloch.—p. 279.

93. **Fatal Results from Too Exclusive Carbohydrate Feeding of Infants.**—Bloch relates that the child was 2 months old, a twin, of healthy parents. It weighed 2 kg. at birth and was fed with barley gruel exclusively. It seemed to be thriving until two months old when it began to decline, with diarrheic stools and emaciation, intertrigo on the buttocks and xerophthalmia. The temperature could not be brought above 34.3 C. and the child died within a month. The result of the carbohydrate starvation in this case was amylogenous atrophy. If the child is given milk occasionally it may develop universal edema as in another case described, with urine free from albumin and kidney cells. This type of disturbance from carbohydrate feeding has been called hydremic atrophy, but there is no atrophy. Cases of each type are illustrated, as also of a third type in which sclerema was accompanied by contracture of the neck and arms, the head being bent far back and the arms drawn up. This third child died at its sixth month. The extreme plumpness in this case was due to sclerema, not to edema alone, as in the other case. The mothers of both these "plump" children thought they were thriving satisfactorily until toward the end. The second child was moribund when first seen, all the organs, especially the heart, being so degenerated that it was impossible for the child to rally. Small and weak infants are more liable to develop the form with atrophy, while the older and stronger children are inclined to develop the dropsical type, especially if milk has been given now and then. The opisthotonos and other contractures can be corrected but they return as the pressure is removed. They subside permanently as the child recovers. Bloch does not regard them as actual tetany.

These carbohydrate children are peculiarly susceptible to infections. In treatment, albumin and fat must be given but great care is necessary not to give too much at first, especially of cow's milk, or chronic dyspepsia may become installed. The carbohydrates must not be suppressed entirely, and the gravest consequences may follow if these debilitated babes are put on water and tea alone. Breast milk is indispensable in the severer cases, and is best for all. The stools on too exclusive carbohydrate diet are acid, often loose and thin, with minute bubbles. As the stools grow more acid they may irritate the bowels as well as the skin, and the child suffers from amylogenous colitis. As soon as nourishment is given that does not ferment so readily, the colitis subsides, and on a more nourishing food the child gains rapidly in weight. Bloch has seen infants with this amylogenous colitis who had been treated erroneously with a constipating diet, bismuth and silver nitrate. The consequences were disastrous; in some cases scurvy developed. Albumin milk is particularly useful in this amylogenous colitis, but Bloch insists that the babe must not have all carbohydrates taken from it, so he adds 2 or 3 per cent. grape sugar to the albumin milk. He cites a case in detail to show the benefit from albumin milk after bismuth had failed to induce any improvement. Acorn coffee is useful also, and tannin albuminate. The latter, he says, is entirely harmless, and doses of a few grains a day can be given over long periods even to quite young infants. In some cases the bismuth salts are more effectual; the best, he thinks is bismuth subsalicylate, but he warns that bismuth is a poison and cannot be kept up long. It is important never to give bismuth or tannic acid preparations when the child is on a water or tea diet. Severe diarrhea with general symptoms calls for a day or two of water alone and then milk and water until all signs of intoxication are past. Not until then should carbohydrates be given. But with acute dyspepsia, as a rule, barley and oatmeal soup are useful, especially when the diarrhea is due to overfeeding with milk and there is much decomposition of albumin in the intestine. The barley soup must be thin, actual barley water, and there should not be more than 2 per cent. cane sugar. This rests the bowels and in a few days normal feeding can be resumed. He adds that cow's milk must be boiled for children with these bowel troubles.

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INDUSTRIAL POISONS ENCOUNTERED IN THE MANUFACTURE OF EXPLOSIVES

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Accidental explosions are so great a danger in the industry of making explosives that they overshadow the less spectacular but quite as real danger of industrial poisoning. The outbreak of the great war was followed in Great Britain by a rapid increase in the notifications of occupational poisoning from certain substances as a result of the enormous increase in the manufacture of ammunition of all kinds. What the experience of France and of the Central Powers has been we do not know, but there is no reason to suppose that they have escaped this natural consequence. Nor is there any reason to suppose that we have escaped it, since we too began to increase greatly our production of the ordinary explosives soon after the war broke out, and also to manufacture quite new ones. Consequently, it seemed desirable to learn whether here too this industry has been attended with a serious amount of poisoning, and the United States Bureau of Labor Statistics asked me to make a study of it. I visited forty-one plants in which all sorts of explosives are made except ordinary gunpowder, black powder, for its manufacture does not involve exposure to poisonous fumes or dusts. Shrapnel plants also were omitted, because shrapnel consists of steel receptacles filled with bullets and black powder. The important explosives for such a study as this are nitrocotton, smokeless powder, picric acid, trinitrotoluene, fulminate of mercury, nitroglycerin and the mixed nitroglycerin powders, and some rarer, less used explosives, belonging to the nitro-aromatic series.

In these forty-one plants there were about 30,000 persons employed in work exposing them to poisons of various kinds. Only a minority were women, about 1,100, and of these only forty were doing work which involved serious risk. This, of course, is in great contrast to foreign munition works, in which the majority of the work is done by women, and in all probability women will from now on be employed in increasingly large numbers in our plants, for much of the work is such as women can do perfectly well. There were also few lads employed in this industry, in which carelessness may result so disastrously. But this is another feature which will probably change now.

At the time this study was made, between April and December, 1916, the industry was already large and important. The poisons to which workers are exposed are unfamiliar in this country, and it seems timely to describe them, the processes in which they are encountered, and the effects they may be expected to produce. After the war is over these plants will continue to operate, even if disarmament should follow, for there are many uses to which they can be put. The guncotton factories can produce celluloid, lacquers, artificial leather and photographic films; the picric acid plants can make dyes; trinitrotoluene can be used as a peace explosive. In addition, the compounds which have been produced for this manufacture will continue to be produced for other purposes. We shall continue to distil benzene and toluene and to make phenol (carbolic acid) long after the demand for explosives is over, so that this is not to be regarded as a temporary industry which need not demand much attention because the dangers connected with it will not last long. It has become a permanent part of our industrial life.

To discover how much illness has resulted from this kind of work is difficult; indeed, it is impossible to get full, accurate figures. Superintendents naturally hesitate to give information that may seem to put their employers in a bad light, and the company physician is often quite as unwilling. In other cases, the physician with the best will in the world cannot give usable information, because he has not the habit of keeping records and can only say vaguely that he has sometimes seen as many as twenty cases of "fume sickness" on a hot night, or that he remembers a man who died in the hospital but he was not sure what killed him, so he called it pneumonia. There were only twenty-eight factories from which trustworthy data could be secured, and I found that in those twenty-eight there had been during the preceding year a little more than 2,500 cases of industrial poisoning, with fifty-three deaths. I am quite sure that this figure is less than the truth, for many cases fail to be recognized by the ordinary practitioner.

These 2,500 persons were not all seriously poisoned. There were 111 who had nothing worse than a fulminate rash; there were 205 cases of mild anilin poisoning. But with the exception of these, the form of poisoning was always fairly serious and sometimes very serious. The 2,500 were divided as indicated in the accompanying table.

It will be noted that nitroglycerin, which has been manufactured for many years in this country, has not a single case to its credit, while benzene and toluene have proved very dangerous, and trinitrotoluene, a new explosive in America, is responsible for more trouble than any substance except the nitrogen oxids so commonly evolved in nitration works. The other substances were responsible for only a few deaths.

MANUFACTURE OF EXPLOSIVES

There is always danger of nitrogen oxid fumes in the manufacture of explosives, because they are nitrated products and the processes of nitration are accompanied by the production of these fumes, which give rise to what is commonly called "fume sickness." Haldane states that mice die after half an hour in an atmosphere containing 0.05 per cent. of nitrogen oxids. The danger is greatest in the nitration of cotton to nitrocellulose, and in the nitration of phenol to picric acid, trinitrophenol.

NITROCELLULOSE

Cotton which has been previously purified and finely divided is mixed with acids and allowed to digest till the change to nitrocellulose has occurred. The acids are nitric — which is sometimes used in 100 per cent. strength — and sulphuric acid, the latter being added to take up the water liberated in the reaction which otherwise would dilute the nitric acid. When nitration is complete, the cotton is transferred to a centrifuge — called a wringer — and the acid removed, after which it is "drowned," that is, dropped into a large tank of water and washed thoroughly. It is in the wringing and drowning that the greatest danger of fumes arises. If the acid is not strong enough, the cotton matted or not thoroughly cleansed, or if a few drops of water find their way into the wringer, there may be a rapid decomposition with an evolution of nitrogen oxids so violent that the lid of the wringer is sometimes blown off, the acid splashed about, and the whole room filled with a fine spray of atomized acid as well as fumes. Such an accident results not only in fume poisoning but also in severe burns if the workmen are anywhere near. In drowning, the fumes are not so heavy, and there is not the danger of acid burns.

SOURCES OF POISONING

Poison	Men	Women	Total	Fatal		
				Men	Women	Total
Nitrogen oxid	1,389	..	1,389	28	..	28
Trinitrotoluene	660	43	703	11	2	13
Benzene	14	..	14	7	..	7
Nitrobenzene and toluene	12	..	12	1	..	1
Ether	52	..	52	1	..	1
Phenol	2	..	2	1	..	1
Mixed acids	2	..	2	1	..	1
Sulphuric acid	4	..	4	1	..	1
Picric acid	7	..	7	..	..	..
Anilin	205	..	205	..	..	..
Fulminate	79	32	111	..	..	..
Ammonia	1	..	1	..	..	..
Mercury	1	..	1	..	..	..
Nitronaphthalenes	2	..	2	..	..	..
Chlorin	3	..	3	..	..	..
Total	2,433	75	2,508	51	2	53

The higher the nitration, the greater the danger. Highly nitrated cotton is used for military guncotton, for the making of the so-called nitroglycerin powders, such as ballistite and cordite. We are manufacturing ballistite for our own use and cordite for the British. Both are mixtures of high nitration nitrocotton and nitroglycerin. Cotton of lower nitration is used for the manufacture of smokeless powder, and a still lower variety for celluloid and lacquers and photographic films.

I am told that improvements in technic have lessened the number of such fires, as they are called, in cotton nitration works since I visited them last summer and fall. At that time they were so frequent as to arouse no comment at all. Eight times during a visit to one large works I saw the angry, orange yellow fumes come pouring out, the workmen fleeing before them, and the general suspension of work till the air had had time to clear. The workmen become accustomed to the fumes in great measure, and I have been choked and blinded and speechless in an atmosphere that seemed to cause them no discomfort. There is, however, no real immunity to nitrogen oxid fumes. Old hands (any one who has worked as long as eight months in the explosive industry is an old hand) may succumb as quickly as new ones to an unusually severe exposure.

Cases of Poisoning from These Compounds.— The list given in the tables begins with 1,389 cases of poisoning from nitrogen oxids (995 from nitrocotton plants, 381 from picric acid, and thirteen from nitric acid works). These varied all the way from light to fatal. In light cases, the man "chokes up," the irritation of the fumes causing a spasmodic contraction of the bronchi such as takes place in bronchial asthma, and, indeed, the attack much resembles an asthmatic seizure. Often there is cramplike pain in the abdomen as well. These symptoms are relieved by the usual first-aid remedies, chloroform shaken up in water, and often the man can go back to work on the same shift, though it is considered safer to send him home to bed. Severe and fatal cases present the same picture as the gassed soldiers from the trenches. British and French medical journals have been full of the symptomatology and pathology of chlorin poisoning as it is seen at the front, and their descriptions would fit accurately the industrial nitrogen oxid cases in our explosive works. There is the same tardy onset of serious symptoms, the man usually going home in fair condition and some hours later developing intense and increasing dyspnea; the same gastric symptoms, which are, however, often masked by the much more distressing air hunger; the same gradual filling up of the lungs with fluid which usually results in death. Among the twenty-eight deaths from nitrogen oxid poisoning on my list, sixteen were from edema of the lungs.

There is not much fear that such a case would fail of recognition, but the less violent poisoning which results in various forms of pneumonia often passes for ordinary nonoccupational sickness. This is even more the case with slowly developing inflammations of the lungs, or a recurrence of pneumonia some weeks after the original trouble. In a hospital not far from a large cotton nitration works I found the record of a young man who was exposed to an unusually large amount of nitrous fumes, recovered from the immediate effects, and then for three days suffered from headache, but without any lung involvement. On the fourth day he was taken ill, and signs of consolidation of the lung developed rapidly. He was taken to the hospital, where the diagnosis of acute miliary tuberculosis was made, but after death his lungs were found to be gangrenous. Evidently this was a secondary effect of the original injury sustained from the acid fumes. Other instances of pneumonia, sometimes fatal, were related to me by physicians who knew the nature of the processes carried on in the plants and could interpret the dangers to which the men were exposed; but many others had never thought of inquiring as to the men's occupations, and it was only when I questioned them that they began to think back and wonder whether or not the pneumonias they had seen were of this class.[1]

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[1] J. N. Hall and C. E. Cooper (The Effects of the Inhalation of the Fumes of Nitric Acid, The Journal A. M. A., Aug. 5, 1905, p. 396) followed the subsequent history of a number of firemen who had breathed enough nitrogen fumes to affect them seriously. Two who recovered from the immediate effects died of pneumonia four and five weeks later. A necropsy on one of these showed bronchopneumonia with early fibrous change in the solid areas. Fraenkel has described a case of bronchiolitis obliterans in a man who died in the third week after he had inhaled nitrogen oxid vapors.

Another often unrecognized form of nitrogen oxid poisoning is even more rapidly fatal than pulmonary edema. Here the poison seems to act directly on the nervous centers, and the changes found after death are comparatively insignificant. For instance, a foreigner applied for work during the heat of last summer in a picric acid plant where the fumes are unusually bad and very little attention is paid to the safety of the men. He went on with the night shift, and at 4 in the morning he was found lying unconscious in the yard. An ambulance was sent for but he died before the hospital was reached. The necropsy showed only a slight congestion of the meninges, some congestion of the lungs, the heart empty, and the blood fluid and dark.

Fortunately we have a more carefully worked up postmortem examination of this form of nitrogen oxid poisoning. Dr. George Apfelbach of the Illinois Factory Inspection Department had the opportunity to examine the body of a man who, like the one just described, died during the first shift of work. This was in a cotton nitration works on a very hot night, but the fumes from the acid were not bad enough to make any of the other men apply for treatment at the company dispensary. He had worked only about four hours, when he went out saying that the fumes were too much for him, immediately became unconscious, and died in about half an hour. Dr. Apfelbach found the lungs congested; the alveoli containing frothy fluid; the bronchi, trachea and larynx reddened; the kidneys, brain, heart, stomach and intestines absolutely negative; the spleen congested, and the blood fluid, not clotting, and dark in color. A sample of the blood was submitted to Dr. William D. McNally of the coroner's office of Cook County, who found no methemoglobin, but did find the blood slightly acid and containing traces of nitric oxid.

Among the twenty-eight deaths from nitrogen oxid poisoning on our list, sixteen were from pulmonary edema, five were of this extremely rapid form, and seven were from pneumonia.

Inflammation of the throat is not rare, and is occasionally serious. I have records of three cases of laryngeal edema, in one of which intubation had to be performed. This man did not realize that the fumes had injured his throat until about six hours later, when pain and swelling began and increased, and he had to be sent to the hospital for the dangerously increasing dyspnea.

We do not know what are the effects of long continued exposure to these vapors, beyond the fact that they act on the enamel of the teeth, so that men on the nitration area soon lose their front teeth. The wire screening in the windows of company hospitals soon rots away; the men wear pure wool shirts because cotton will not last at all, but even the thread in the seams of shirts rots away and the garment falls apart. It seems incredible that acid strong enough to attack metal and enamel should be without any effect on the mucous lining of the respiratory tract, yet I have not been able to find any evidence of chronic trouble. This is perhaps explained by the continual labor turnover, which is great in all departments of a munition plant, but always greatest in the nitrating areas.

After the cotton is nitrated there is no further danger of poisoning in a nitration works, for the washing and purifying is quite harmless. The next step is the conversion of nitrocotton to smokeless powder or mixed powders; but this is usually carried on in another plant and will be described later, as it involves quite different poisons. The explosive that follows logically after nitrocellulose is picric acid, for its manufacture gives rise to a great deal of nitrogen oxid fume poisoning, more, I believe, in proportion to the men employed, than does the making of nitrocotton.

PICRIC ACID

This is chemically trinitrophenol, and is made by the action of mixed acids on phenol (carbolic acid). It is itself a poison, and so is phenol; it follows, therefore, that while in a nitrocotton works only a minority of the force are exposed to occupational poisoning, in one making picric acid, almost all are so exposed.

The making of picric acid seems to be comparatively simple and can be carried on with a primitive equipment. The consequence is that soon after the beginning of the war many picric acid works were started in abandoned factories or hastily constructed plants, and the production was rushed in a most reckless fashion in order to fill war contracts. The worst conditions I saw anywhere were in picric acid works, not only in the small plants, but also in large establishments employing some thousands of men. The moment the mixed acids meet the phenol, there is an evolution of nitrogen oxid fumes, and if nitration is done in partly open receptacles, and hand stirring required, and if no adequate exhaust system has been installed, there may be at times a condition inside the nitration sheds that is a menace to life. Unfortunately it is in just these recklessly managed plants that medical care of the men is poorest, and provision for personal cleanliness most insufficient.

A further danger in this industry is the handling of picric acid, especially if it is dried down to less than 1 per cent. of moisture, when it becomes very dusty to handle. As a usual thing it is shipped with 10 per cent. of moisture left in. Men who handle it and get dusted over with it suffer from a dermatitis which may be extremely irritating, as I can testify from my own experience after a visit to a drying house one hot day last July. The better managed companies take pains to protect their men by baths and changes of clothing, but in the newer plants "picric itch" is taken as a matter of course.

Systemic poisoning from picric acid has been known to the French for some time[2] because the favorite high explosive of the French, melinite, consists chiefly of picric acid. The British picric acid mixture is known as lyddite. There are not many cases of picric acid poisoning to be found in our plants, perhaps because this compound is slowly absorbed and labor in these places changes rapidly, the turnover being truly enormous in some of them. A few instances were related to me of symptoms such as the French describe, abdominal cramps, vomiting, diarrhea, loss of appetite and loss of weight, leading the man to quit work for fear of serious consequences.

An unusually severe form was described by Dr. T. F. Harrington of the Massachusetts Board of Labor and Industry:

> Two men spent Sunday repairing leaky ducts in the building in which nitration of phenol was carried on. The next day, one of them began to feel very weak, his pulse was small and irregular, he was pale with a slight bluish tint, and he had headache and dizziness and palpitation of the heart. The other man went to the company physician on Friday complaining that he had felt ill ever since his Sunday's job, had been unable to eat, had nausea, headache, cough and difficulty

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[2] Chéron: Jour. de thérap., 1880, p. 121.

in breathing on slight exertion, and that he felt dull and confused and very weak. These men lost two and three weeks from work.

PHENOL

The synthetic preparation of phenol, C_6H_5OH, consists in sulphonating benzene, forming benzene sulphonic acid, $C_6H_5SO_2OH$, and then alkaline fusion by which the OH group is introduced in place of the sulphonic acid group. The greatest danger in this work has already been spoken of, fumes of benzene. Phenol burns are common; systemic poisoning seems to be rare.

A fatal case was reported by Dr. T. F. Harrington, of a young chemist who stepped into a pool of phenol waste and soaked his leg in it. Soon he began to complain of ringing in the ears, dyspnea and dizziness. Then he became dazed, excited and almost hysterical. He was allowed to leave the building in this condition, but evidently he soon lost consciousness, for the next morning he was found dead on the road. The leg was then greenish black up to the knee.

BENZENE[3] AND TOLUENE,[4] OR METHYLBENZENE

These two may be considered together, since their toxicity is about equal and the symptoms of poisoning much the same. Benzene is third on my list of poisons, and just half of the cases were fatal. This is partly because slight poisoning from benzene passes over quickly and excites little attention and the cases are not remembered. All those reported to me were serious.

Benzene and toluene are poisons with: (*a*) a specific action on the nervous system, leading to dizziness, confusion, transient excitement followed by dulness, muscular twitchings, stupor, coma, respiration rapid then slow, pulse rapid and temperature subnormal; (*b*) the production of multiple hemorrhages through a solvent action on the capillary endothelium, or through the lodgment of fat emboli, causing rupture of the capillary wall,[5] and (*c*) changes in the constituents of the blood, the most striking of which is a leukopenia.

Of the seven deaths from benzene on my list, five occurred in connection with repair work in or round a still. The other two patients were engaged in sulphonating benzene for the synthetic production of phenol. All were sudden, sometimes shockingly sudden. Thus one man went to the top of a still to stop a leak, was overcome, and died in less than five minutes' time, while two fellow workmen who went to his assistance were also overcome and with difficulty revived. In another case, the men were inside the still, which was supposed to be free from benzene, became excited and then stupified, and were pulled out quite unconscious; the one who had been in longer was revived with oxygen, and the other died.

I am indebted to Dr. H. S. Martland, pathologist of the Newark City Hospital, for the records of two necropsies performed by him on men who died from benzene poisoning as a result of inhaling fumes in the sulphonating room of a phenol works. One was found dead beside the "liming vat" into which the sulphonated benzene—doubtless carrying some unchanged benzene with it—flowed, and because of the heat was volatilized at once; the other was found dying near the benzene supply pump in the same room. Dr. Martland found in the first: cyanosis of the liver, spleen and kidneys, dilatation of the right heart with dark blood, pleural ecchymoses, and small areas of acute interstitial emphysema in the lungs. In the second man the changes were similar, but here a decided odor of benzene was perceived when the lungs were sectioned, and there were tiny hemorrhages into the pleurae and pericardium. The urine contained an abnormal quantity of phenol, but no benzene.

NITRO AND AMIDO DERIVATIVES OF THE BENZENE RING

There are several of these compounds made for use as explosives, and others that are steps in the production of explosives. Most important of the former is picric acid, already described, and trinitrotoluene (triton or T. N. T.); less important are the nitronaphthalenes, diphenylamin or diamidobenzene, tetranitranilin (T. N. A.), and tetranitromethylanilin (tetryl). For the production of explosives, we find nitrobenzene and amidobenzene or anilin, chlorobenzene and dinitrochlorbenzene.

These compounds have certain characteristics in common, but cases of industrial poisoning from different members of the group vary quite a little. Curschmann[6] believes that the higher the nitration the greater the toxicity; but sometimes the lower nitrations are more volatile or more easily absorbed through the skin and therefore in actual practice more dangerous. It must also be remembered that these explosives are often not chemically pure. Crude trinitrotoluene may contain not only dinitrotoluene, but also the far more poisonous dinitrobenzene, if the toluene contained an admixture of benzene.

Briefly described, the symptoms typical of poisoning by this group depend on a direct action on the nerve centers, respiratory, heat regulating and vasomotor, and on changes in the elements of the blood, the most important of which are, the formation of methemoglobin and the destruction and subsequent regeneration of red corpuscles. Some would ascribe all the symptoms to the presence of methemoglobin, but Heubner[7] has shown that they may be produced in rabbits before methemoglobin is formed, through action on the lower centers, death occurring from respiratory paralysis.

The volatile compounds, such as anilin, nitrobenzene, diphenylamin (used as a constituent of smokeless powder) and nitrochlorbenzene, produce their effects rapidly. The following case is typical of nitrobenzene poisoning:

The man had been exposed to fumes of nitrobenzene and had become dizzy and faint, so that he was obliged to go out into the open air. His face, which had been flushed, grew cyanotic, his distress increased, and a severe throbbing headache came on, the pulse became rapid and small, and respirations quick and shallow. He was taken home and put to bed where he soon lost consciousness. He lay in stupor, deeply cyanosed, almost pulseless, for several hours; then convulsions came on, and he died in less than twenty-four hours after the beginning of the attack.

Blood drawn during such an attack is chocolate colored, but methemoglobin may not be demonstrable till later unless the red corpuscles are dissolved in water.[8] Hudson[9] finds quite constantly in nitrobenzene poisoning an early leukocytosis soon changing to a pronounced lymphocytosis, and destructive changes in the red blood cells. The urine is dark and contains urobilin, but no hemoglobin nor bilirubin.[10]

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[3] Rambousek (Concordia, 1910, p. 448) thinks benzene the more toxic.

[4] Lehmann (Arch. f. Hyg., 1911, **74**, 1) finds that narcosis from toluene is more rapid and lasts longer.

[5] Santesson: Arch. f. Hyg., 1907, **31**, 336.

[6] Curschmann: Internat. Cong. Indust. Hyg., Brussels, 1910.

[7] Heubner: Zentralbl. f. Gewerbehyg., 1914, **2**, 409.

[8] Roth: Zentralbl. f. inn. Med., 1913, **34**, 417.

[9] Hudson: Med. Rec., New York, 1917, **91**, 89.

Nitrobenzene causes fewer cases of poisoning than anilin, but the cases are of a severer type. In the explosives industry I did not find serious trouble from anilin. There is a good deal of poisoning of a mild type in the one factory in which I found nitrobenzene being reduced to anilin and the latter used for the production of explosives, but the men are well protected against serious poisoning. It seems not to be so dangerous to breathe anilin fumes as to spill the oil over the skin, and in this plant such an accident is always followed by prompt stripping and bathing. Of course we shall probably begin to have chronic anilin poisoning as the Germans have described it, profound anemia simulating valvular heart disease, with its dyspnea and cyanosis. We ought also to be watching for the bladder tumors which the Germans have found to be unduly common among anilin workers.

The local effect of some of these compounds on the skin is much more pronounced than in the case of others; indeed, the irritating dermatitis caused by picric acid is so common as to constitute typical picric acid poisoning in the eyes of powder works physicians, while anilin gives little trouble of this sort. A more or less deep yellow staining of the skin and hair is caused by most of them. Picric acid workers are the most deeply dyed and are usually called "canaries" by the countryside. Trinitrotoluene causes a less vivid stain, tetranitromethylanilin a stain with a greenish tint. This yellow color is so conspicuous as to confuse the inexperienced and lead in some cases to a diagnosis of jaundice.[11]

The confusion is increased by the fact that the staining of the skin is not only a mechanical effect of contact with the dye, but is in part caused by its deposit in the deeper layers. White[12] experimented on himself with trinitrotoluene, which he rubbed into the skin of the arm, and a yellow color appeared under his nails. In the same way the sclera may turn yellow when there is no jaundice.

Dermatitis is said to be most severe from dinitrochlorbenzene, next from tetranitromethylanilin, then from trinitrotoluene, and then from picric acid.

TRINITROTOLUENE

Usually the cases of poisoning from trinitrotoluene do not conform to the type given above, for absorption takes place more slowly and there is time for degeneration in the parenchymatous organs. This may be true even of more volatile compounds than trinitrotoluene. In 1906 a case was reported in England of a man who died of acute yellow atrophy of the liver from nitrobenzene poisoning, but it is much more common in connection with trinitrotoluene. The British factory inspection reports now contain a new occupational disease, toxic jaundice. In answer to a question in the House of Commons last September, a member of the government said that there had been in the previous nine months 120 cases of toxic jaundice, with thirty-three deaths, and of these, ninety-five with twenty-eight deaths had been caused by trinitrotoluene, and the others by that new industrial poison used in aeroplane "dope," tetrachlorethane.

There are 703 cases of trinitrotoluene poisoning on my list, with thirteen deaths. I should have added six more deaths, had it not been for my rule not to include a case unless it was reported by the physician who saw it. These came to me at second hand, and first hand information was refused.

Trinitrotoluene is a new explosive in this country, though a plant in northern Wisconsin has been making it for some years. Even in England it was unknown before the war, for nitrobenzene had been used instead. Now it is made in great quantities, since it is the chief constituent used in high explosive shells, together with a detonator of fulminate of mercury with perhaps some tetranitranilin. There is, I believe, less danger of poisoning in the nitrating of toluene than in the subsequent handling of the trinitrotoluene, and the danger from nitrogen oxid fumes in nitrating seems to be slight. It is in the melting, pouring, pressing, boring and planing of the charges for shells that the greatest number of cases occur. There are both dust and fumes in this sort of work, sometimes to an excessive degree, especially in the boring process, when the detonator hole must be made in the solid charge. Even small amounts of dust may be dangerous. I found a woman suffering from a severe form of toxic hepatitis whose work had been weighing charges and scraping off with scissors a little of the trinitrotoluene if the charge was too heavy. She sickened after only five weeks' employment.

Typical trinitrotoluene poisoning is not rapid. The British show that 83 per cent. of their cases of jaundice have occurred between the fifth and sixteenth weeks of work.[13] I might cite the following cases from among those reported to me, as typical of various forms of trinitrotoluene poisoning. The first was only moderately severe:

> The man was employed on a machine for boring detonator holes in trinitrotoluene charges, and the shield that was supposed to hold the dust produced in boring was broken, so that he had to breathe contaminated air. He began to have an obstinate cough after three weeks' work, and expectorated yellow mucus which would stain water yellow. Later he was put into the molding room where trinitrotoluene is melted in great, partly open kettles, and fumes escape. By this time he felt very ill and attributed it to the fumes, which seemed to give him headache, nausea and even vomiting. He had pain about the navel and in the joints. At night the joints were swollen, especially the ankles. His headaches increased in severity, he had no appetite, and grew so weak that he was obliged to quit work.

This man paid several visits to the company physician, who regarded the symptoms as unimportant and sent him back to the same sort of work. British authorities emphasize the great risk of doing this, for at any moment a slight case may develop into one rapidly fatal. They attach importance to such symptoms as a persistent cough due to no known cause, unaccustomed shortness of breath, fatigue not explained by exertion, and pains coming on suddenly in the feet and legs. These persons should at once be shifted to safe occupations. That this may not be enough to save the patient is shown by the history of one of my patients:

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[10] Mohr: Deutsch. med. Wchnschr., 1902, 28, 73.

[11] We read that, in the British and French armies, soldiers who want a leave of absence sometimes take a small dose of melinite, which makes them vomit, suffer from cramps and diarrhea, and finally turn yellow, simulating in every way, except for clay-colored stools, an attack of hepatic jaundice.

[12] White: Lancet, London, 1916, 1, 400.

[13] Lancet, London, Dec. 16, 1916.

A girl, aged 19, for some months had been dipping trinitrotoluene charges in melted paraffin, and then she was sent to work in the office. It was after she had left the trinitrotoluene department that she developed symptoms of poisoning. At first they were slight, nausea and constipation without jaundice, but they increased rapidly, persistent vomiting came on, deep jaundice, complete suppression of urine, and death after twelve hours of coma.

Two cases of the same kind in men were reported from another factory. Both patients had symptoms typical of acute yellow atrophy of the liver, vague discomfort and a feeling of weakness, then marked gastro-intestinal disturbance, griping pains across the abdomen, increasing jaundice, fever, dropsy, delirium, coma and death. There were also petechial hemorrhages over the body.

No necropsies were performed in any of these cases, but Martland[14] has recently published the record of such an examination of a fatal case of trinitrotoluene poisoning, and also of one that presented a picture of aplastic anemia.

Less typical forms of trinitrotoluene poisoning occur when there has been a massive exposure to the poison. Three instances of this were related by Dr. T. F. Harrington but one will suffice to illustrate this class of cases:

A man, aged 42, employed as a carpenter in a building in which toluene is nitrated, became dizzy from the fumes from a duct near which he was working. He went out into the air and revived, but when he tried to resume work the dizziness returned and he was obliged to quit and go home. The next morning he came back, but as soon as he reached the place at which he had been at work the day before, he was overcome with faintness and nausea and had to be helped out of the building, when he began to vomit. It was a 2 mile drive to his home, and the fresh air revived him somewhat; but the next day he felt chilly and suddenly became very ill, had convulsions, and died about midnight. As the cause of death the coroner's report gave "red cell destruction and secondary oxygen starvation, especially of brain and nervous system; general congestion of organs."

According to British authorities, women are no more susceptible to trinitrotoluene than are men, but the immature worker of either sex is decidedly more susceptible than the mature. These authorities advise forbidding the employment of persons under 20 years of age, since they have discovered that while the general mortality from toxic jaundice, recognized as such, was 33 per cent., among the eleven patients who were under 18 years of age, no less than eight died.

OTHER POISONS

Tetranitromethylanilin and Tetranitranilin.—These are powerful explosives, used to an increasing extent in Europe as constituents of detonators, but so far too expensive in this country to meet general use. Their manufacture involves the danger that inheres in such compounds as anilin, methyl alcohol and nitric acid, and they are poisons belonging to the nitro-aromatic group. I did not find any trouble among workers with these substances, except a rather distressing dermatitis among the men drying and packing tetranitromethylanilin.

Fulminate of Mercury.—Mercury is digested with nitric acid, and the resulting nitrate is mixed with alcohol, during which latter process there is a lively evolution of fumes of complicated composition, the most important constituent being ethyl nitrite. There is some risk of mercurial poisoning—I was told of one case of salivation—and the ethyl nitrite fumes may be strong enough, especially in hot humid weather, to make work almost intolerable; but there seems to be no serious depression from it.

Fulminate is extremely explosive and is the essential part of percussion caps and detonators. There are several thousand men and women employed in making caps and detonators in our munition plants. Apparently, from German reports, mercurial poisoning is not unknown among such workers. Not long ago Oppenheim[15] reported cases of fulminate dermatitis from Austrian works, and among thirteen there were eight with "stomatitis mercurialis." The British Health of Munition Workers Committee found mercurialism from this source rare, but the occurrence of anorexia, headache, nervousness and depression among fulminate workers may be attributable to this element.

It is well to bear in mind the possibility of this form of industrial poisoning in fulminate workers, for at present the only kind recognized by American physicians seems to be the dermatitis, which is quite common. I found it more prevalent among men than among women, probably because women dread a disfiguring eruption more than men do and take more pains to protect themselves. Among 1,070 women working in one plant, only thirty-two had had skin lesions as a result of handling the fulminate, while thirty-six of the 505 men had had them.

Smokeless Powder.—This is not a powder at all, nor are the so-called nitroglycerin or mixed powders. They resemble in appearance chopped brown macaroni or spaghetti or vermicelli, with many tiny canals running the length of the string. In order to make these powders, nitrocotton is dehydrated and then changed to a rubber-like consistency by mixing with some partial solvent, ether-alcohol, or amyl acetate, or a mixture of nitroglycerin and acetone. Then the rubbery mass is pressed through macaroni machines and the cords cut into proper lengths, during which a great deal of the solvent evaporates.

Ether-Alcohol.—Ordinary smokeless powder, not cordite or ballistite, is made by driving the water out from nitrocotton by alcohol in a hydraulic press. So far as I have seen, the alcohol used is always ethyl. In making celluloid, large quantities of methyl alcohol may be used, but not in powder work. The alcohol fumes may be very strong at times, but the real trouble comes from the ether, especially in the pressing and cutting department, in which the temperature must be kept at from 85 to 95 F.

Acute ether intoxication, "ether jag," is so usual as to be taken as a matter of course. New hands suffer almost always, and some men cannot become accustomed to it. They pass through all the stages of anesthesia, excitement, with loud laughter and singing or unreasonable anger, and then increasing dulness, so that by the time the company physician sees them they are usually already somnolent. They are put to bed and the next day they have headache, more or less nausea and general discomfort. Most company physicians refuse to believe that the ether has any further effect, or that systemic symptoms are to be expected after long exposure to it; but it is not difficult to find instances of men who have had to quit work because of chronic indigestion, constipation, loss of weight and strength, and loss of appetite because of the continual taste of ether in the mouth.

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[14] Martland, H. S.: Trinitrotoluene Poisoning, The Journal A. M. A., March 17, 1917, p. 835.

[15] Oppenheim: Wien. klin. Wchnschr., 1915, 28, 1273.

Nephritis also is noted by some physicians as a possible result, and one company physician is careful to shift to other work men who show any symptoms of kidney involvement. The fatal case of ether poisoning on my list was one of uremia, but the man was a syphilitic and doubtless had damaged kidneys when he went to work.

Sometimes the narcosis is profound and is accompanied by signs of irritation in the lungs, which may develop into a bronchopneumonia. Since diphenylamin is added to many of these smokeless powders, one should remember that the symptoms of an amidobenzene may be also present in poisoning from this solvent.

In 1910, Sand[16] presented the results of experiments on dogs with ether-alcohol fumes. His findings are significant in connection with the possible chronic poisoning of these ether workers in explosive manufacture. The ether-alcohol administered in vapor form, 500 gm. being evaporated during ten hours in a kennel 1 cubic meter in size. These animals showed all the manifestations of "ether jag" as they are seen in industrial poisoning. Then tolerance was gained and they did not suffer in health; in fact, three of them gained somewhat in weight; but when two were killed and examined, a general condition of stasis was found in the organs and brain, with fatty degeneration in the liver and in the kidney epithelium.

Amyl Acetate; Acetone.—These are the solvents used for other powders. Amyl acetate is called banana oil by the workmen; and perhaps because of its strong, sickeningly sweet odor, they attribute to it the headache, dizziness, smarting of the eyes, and other symptoms from which they suffer when using a mixture containing it.[17] Lehmann,[18] however, experimenting on men as well as on animals, found it slightly toxic, and in powder works, when it is not used in combination with other poisons, it does not seem to cause any discomfort. Acetone is listed by Sommerfeld as a poison, but Kobert thinks industrial poisoning from it hardly thinkable. I found the men in one plant using it as an eye wash when they got a foreign particle in the eye, and in another plant the physician told me that acetone was a good substitute for iodin in the treatment of slight wounds.

Nitroglycerin.—It sounds strange to say that this very dangerous explosive is the safest of all, but that is true if one is considering poisoning, not accidents. Indeed, it is probably true of accidents also, because we have been making nitroglycerin a great many years and have learned how to do it, as we have not learned how to make the newer explosives. All the precautions taken in nitroglycerin works against accidents serve also as preventives of poisoning: strict cleanliness of the premises, separation of different processes so that as small a number of men as possible will be in any one building, close watch against decomposition during nitration, and prompt drowning of the charge when that occurs.[19]

There are a few other poisons given off in gaseous form during the preparation of compounds used in this industry. There is chlorin gas, which passes off during the early stage of nitric acid manufacture, when the sulphuric acid acting on Chili saltpeter meets the common salt that is always present as an impurity. Most acid works try to provide in some way for the carrying off of these fumes, and they are in any case so irrespirable that men get away as soon as possible, before much harm has been done. There is ammonia from the aqua ammonia used in dynamite plants for ammonium nitrate, which is added to the "dope." Sulphur dioxid, very irritating and dangerous, is given off in the making of sulphuric acid and at one stage in the manufacture of phenol.

This hasty review of the substances which are necessary for the production of explosives is enough to show that it is an industry full of dangers to the workers quite aside from the ever present danger of violent explosions. Indeed, it offers an unusually rich field of research for those who are interested in the effect of volatile poisons on the human subject.

Hull House.

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[16] Sand, René: Internat. Cong. Indust. Hyg., Brussels, 1910.

[17] Paint removers and varnish removers which smell strongly of amyl acetate contain in addition such volatile poisons as benzene, methyl alcohol and carbon disulphid, but the odor of the banana oil overpowers or masks the others.

[18] Lehmann: Arch. f. Hyg., 1911, **74**, 1.

[19] The singular absence of symptoms such as one would expect in nitroglycerin workers has been discussed by C. E. Laws (Nitroglycerin Head, The Journal A. M. A., March 5, 1910, p. 793); by G. E. Ebright (The Effects of Nitroglycerin on Those Engaged in Its Manufacture, ibid., Jan. 17, 1914, p. 201), and by Hudson (Med. Rec., New York, 1917, **91**, 89).

THE THERAPEUTIC VALUE OF PERTUSSIS VACCINE IN WHOOPING COUGH *

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This study was made during the late summer of 1916, as part of the investigation by the Research Laboratory of the New York City Health Department on the value of pertussis vaccine in whooping cough.

Because of the infantile paralysis epidemic, car strikes and the expiration, October 1, of the lease of the building used for clinical purposes, the number of patients used for this study is far less than we could wish. The deductions, however, are suggestive, and show the danger of drawing conclusions too hastily and without making a critical comparison with control cases.

Dr. Luttinger, in his report of May, 1915, pointed out the pitfalls in accepting the statements of patients in the clinic; but in spite of the difficulties he encountered, he gathered from his records that pertussis vaccine lessened the duration of the whoop by 37.5 per cent. as against treatment with drugs. Hoag[1] is enthusiastic about the vaccine, claiming a reduction of the whoop to from sixteen to nineteen and one half days, after from three to ten injections of the vaccine, in contrast to the duration, from fifty to one hundred and forty-five days, in cases in which only one injection is given. Many other physicians, who have received and used the New York Health Department pertussis vaccine, verbally and by letter have reported most encouraging results. Drs. A. F. Hess and Matthias Nicoll are among those who are skeptical of the marked curative effects of a vaccine. Dr. Hess believes it has some prophylactic value. Before tabulation of our records, we had the impression that pertussis vaccine had had a somewhat favorable influence on the disease, but in scientific work, impressions, naturally, cannot count against the recorded fact. We believe now that the hope for a favorable reaction intensified the memory of those responses which were favorable, and impressed these cumulative mental records on our minds more strongly than the unfavorable, making them seem more numerous than they actually were.

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* From the Bureau of Laboratories, New York City Health Department.

[1] Hoag, W. B.: Am. Med., 1916, **11**, 255.

In spite of the preponderance of favorable comments on the vaccine which were chiefly impressions, the directors of the whooping cough studies felt that further control work was necessary to determine the real and permanent place of pertussis vaccine in our therapeutic armamentarium.

Whooping cough is not easily studied. There is not the control of observations as in an illness confining the patient to bed. Like all diseases, it varies in degree according to epidemics, season, individual reaction, etc. Members of the same family, ill at the same time, react differently. While one person in a family exhibits a mild and short paroxysmal stage of the disease, another, under apparently the same conditions, suffers a severe and alarming attack. The others may escape entirely. It is unsafe, therefore, to draw comparisons between the vaccine treated and the nonvaccine treated in a single family. Most of our impressions are probably obtained thus.

TABLE 1.—AVERAGE DURATION OF THE DISEASE, ACCORDING TO SYMPTOMS

	Whoop or Paroxysmal Cough Developed after Injections Began				Injections Given During First Week of Whoop				Injections During Second Week of Whoop				Controls Terpin Hydrate Medication or Milk Injections		Dilute Milk Injections; Whoop or Paroxysmal Cough Developing after Injections		Dilute Milk Injections First Week; Whoop or Paroxysmal Cough	
	Pertussis Vaccine		Influenza Vaccine		Pertussis Vaccine		Influenza Vaccine		Pertussis Vaccine		Influenza Vaccine							
	Number of Cases	Aver. Duration, Wks.	Number of Cases	Aver. Duration, Wks..	Number of Cases	Aver. Duration, Wks.	Number of Cases	Aver. Duration, Wks.	Number of Cases	Aver. Duration, Wks.	Number of Cases	Aver. Duration, Wks.	Number of Cases	Aver. Duration, Wks.	Number of Cases	Aver. Duration, Wks.	Number of Cases	Aver. Duration, Wks.
Mild onset; 3 or 4 injections																		
Cough........	25	7-8	21	7-8	23	8	6	7-8	4	8-9	4	9-10	5	9	4	5	5	7-8
Whoop........	21	2-3	18	4-5	22	4-5	5	4-5	4	3-4	3	7-8	5	2-3	2	2-3	3	3-4
Vomiting.....	17	3	14	3-4	19	3-4	3	4-5	3	2-3	3	<1	4	2-3	1	<1	4	2-3
Parox. cough	4	4-5	3	4-5	1	6-7	..	....	...	....	1	3	...	....	2	2-3	2	3-4
Moderate or severe onset; 3 or 4 injections																		
Cough........	5	10	7	7-8	43	8	34	8-9	36	8-9	22	9-10	18	11-12	1	8-9	1	12
Whoop........	4	5-6	6	4-5	41	5-6	32	4-5	34	5-6	22	5-6	17	6-7	1	4-5	1	2-3
Vomiting.....	5	4-5	6	2-3	39	4	30	3-4	31	4-5	19	5	11	6	1	4-5	1	11
Parox. cough	..	....	1	5-6	2	6	2	6	2	5	...	....	1	4-5				
Mild onset; 2 injections																		
Cough........	2	5-6	2	7	1	7-8	2	5	...	....	2	11-12						
Whoop........	2	3-4	2	2-3	1	1-2	2	3	...	....	2	9-10						
Vomiting.....	1	<1	..	....	..	....	..	....	...	....	2	5						
Moderate or severe onset																		
Cough........	1	7-8	3	7-8	2	10	2	11-12	3	9-10	7	8-9						
Whoop........	1	5-6	3	6-7	2	6	2	9	3	6-7	7	6-7						
Vomiting.....	1	6-7	3	5-6	2	4-5	2	5	3	1-2	7	4-5						
Mild onset; 1 injection																		
Cough........	1	7-8	1	10-12	4	6-7	1	6-7	2	7-8	1	9-10						
Whoop........	1	3-4	1	7-8	3	5-6	1	3-4	2	6	1	2-3						
Vomiting.....	..	....	..	....	4	2	1	<1	2	2-3	1	3-4						
Parox. cough	..	....	..	....	1	4-5	0	0										
Moderate or severe onset																		
Cough........	..	....	..	....	2	9	3	7-8	4	7-8	8	8-9						
Whoop........	..	....	..	....	2	5-6	2	3-4	4	5-6	8	6-7						
Vomiting.....	..	....	..	....	2	2-3	2	4-5	4	3	8	4-5						
Parox. cough	..	....	..	....	..	....	1	8-9										

The only statistics which can be of value are those culled from a large number of cases and carefully and critically observed, so that the extreme variations of the disease itself and the errors which must creep in when one has to depend on the word of parent or guardian for our knowledge of the progress of the disease are leveled down and reduced to a minimum.

The personal equation of the examiner, too, must be reckoned with. When results are not striking and sudden (as they are not with pertussis vaccine), it must make a difference whether the interpreter of the symptoms is an optimist or a pessimist.

As Dr. Luttinger has pointed out, the ideal place to study the disease is the hospital, where the children may be controlled and watched by trained observers. Unfortunately, the children brought to the hospital with pertussis, or those who contract it there, do not represent the average. They more commonly have advanced cases with complications, or cases so severe that the parents are alarmed. Children with early cases contracted in the hospital usually leave when they have recovered from their primary trouble. On the whole, under present conditions, these cases are not favorable for testing the vaccine.

A pertussis crèche, in which children could be segregated during the day while the parents are at work, would afford a fair opportunity of study; but, as far as we know, there are none. Of course, the child could not be observed at night. It is at this time of the twenty-four hours that the mothers, according to Dr. Luttinger, report favorable results from the vaccine. Unless such a crèche could be located in a whooping cough neighborhood, its value, from the sanitarian's point of view, would be minimized by the danger of conveying infection during transportation of the child to it.

The clinic, then, at present in New York is the available, but not altogether satisfactory place for trying out the effects of the vaccine. Leaving out the question of the danger of transmitting contagion during the journey to and from the clinic and in the waiting room, we cannot get away from the fact that we are obliged to rely on the untrained, if not ignorant, unintelligent or mendacious parent or guardian for our facts. As often as not, they try to answer to please the questioner; or exaggerate symptoms, hoping for better treatment; or they lessen symptoms to get a discharge for the child to go to the country or return to school, etc.

Unless the child coughs in the clinic or presents some corroborative suggestive symptoms, such as subconjunctival hemorrhage, ulcer of the frenum, or puffy eyelids, how can one be sure that the child has whooping cough? It is not unusual for a young mother to say after one or more visits, "My child does not cough like those I have heard. I do not believe he has whooping cough after all." During last summer, at least, according to subsequent confession, some mothers brought their children for injections "because they thought 'the needle' would prevent infantile paralysis" The Italians, particularly, feel that the "syringa" is wonderful treatment for anything that happens to ail one. It makes weak children strong.

TABLE 2.—IMMUNITY

	Number of Children in Family											Families Total	Children in Families Total	Immunes	Cases Whooping Cough	Per Cent. Immune
	1	2	3	4	5	6	7	8	9	10	11					
Number families with 100 per cent. whooping cough	67	46	23	15	7	4	1	2	..	..	1	166	381	0	381	0
Number whooping cough families 16 immunes (nonvaccinated) first exposure in family........ . .	..	11	18	17	12	4	2	2	1			67	267	155	112	58
Number families with immunes, second exposure in family	..	..	1	3	3	..	..	1	1	..	.	9	47	18	27	
Number families with immunes, third exposure in family..... . .	..	..	..	..	1	..	..	..	.	.	.	1	5	1	4	
Number families with immunes who received influenza vaccine .	..	5	3	..	2	1	..	..	1		.	12	44	19	18	
Number families with immunes, some receiving influenza vaccine and some pertussis vaccine .	..	.	2	3	..	1	..	..	..		.	6	24			
Number families with immunes who received pertussis vaccine		6	7	3	2	2	..	..	..		.	20	67	30	37	

The cases suitable for treatment, too, are cut down by the fact that the parent is apt to wait for the height of the paroxysmal stage before she brings the child for treatment. A vaccine that "cures" when begun at the end of the second or during the third week must be accepted with a grain of salt. One would expect spontaneous recession. Some observers report giving the vaccine every other day until they get a response — from six to ten or more injections. This would cover a period of two, three or more weeks and, if the injections were begun after the paroxysmal cough or whoop had declared itself, would carry them over into what would ordinarily be the declining stage of the disease.

Because of these difficulties (and others) we were obliged to throw out many of our records in collating our figures. Over 1,000 patients were seen by us from July 10 to Sept. 30, 1916. About 500 were rejected because they presented themselves after the second week of the disease, or because the records were too incomplete; 93, because of questionable whooping cough; 49, because the information was unreliable; 126, who had either moved or given a wrong address so that their subsequent history after the closing of the clinic could not be obtained; 6, because they were not at home on several visits of inquiry; 3, because of questionable exposure to whooping cough, and 1, because the original record card was lost.

The plan of our investigation differs from Dr. Luttinger's in using, as a control, inoculations, made for purposes of comparison, of alternate patients, with a vaccine made of an organism somewhat similar to *Bacillus pertussis* and one likewise found in throat secretions — the influenza bacillus. Only patients presenting themselves before the third week of the paroxysmal stage or the third week of the whoop were injected. Injections were intramuscular. Other patients were treated with terpin hydrate by mouth and also a few by intramuscular injections of a highly diluted milk solution. These were used as controls to show how the disease was running at that season. Three or four injections were given each patient who returned to the clinic, one every other day, and a fourth from five to seven days after the third. The last mentioned was given only when the paroxysmal stage was progressing unfavorably.

The intelligence of the guardian or parent who reported the symptoms was noted in a record, careful cross examinations were made to rule out false reports as far as possible, and note was taken of every child actually heard with a typical paroxysmal cough in the clinic. Home visits to complete the records were made in every case in which the patient failed to return to the clinic until discharged.

In recording the remarks on the charts, the investigators were not biased by a knowledge of the vaccines employed, as they did not know until the study was finished which was which. This secret was safeguarded by the maker of the vaccines.

TABLE 3.—EXPOSED CHILDREN WHO DID NOT CONTRACT WHOOPING COUGH (FAMILY EXPOSURE; SIXTY-SEVEN FAMILIES)

Number Children (67 Families)	Number Children in Family								Total
	2	3	4	5	6	7	8	9	
Number immunes (nonvaccinated), first exposure in family	11	26	38	44	18	8	8	1	154
Number lated	5	5	3	2	3	..	..	1	19
Number immunes inoculated with pertussis vaccine .	6	10	7	3	4	..	..	..	30
Number children in partially immune families who contracted whooping cough, first exposure in family	..	..	..	..	..	..	..	..	112
Number children in partially immune families who contracted whooping cough, second exposure in family . .	..	2	1	..	..	..	..	..	3

Dr. Luttinger's 204 cases, reported in May, 1915, showed that the patients treated with vaccine whooped, on an average, twenty-five days, while the patients treated with drugs whooped, on an average, forty days.

We wish to remind the reader that we feel that our numbers are much too small to be of full scientific value. We quote them chiefly for the interest of comparison.

Group 1: Grouping together, as did Dr. Luttinger and Dr. Hoag, all our patients treated with pertussis vaccine (136), we find that the whoop averaged thirty-two days. In those treated with the influenza vaccine (94), the whoop averaged thirty-five days. In the controls treated with highly diluted milk injections or terpin hydrate medication (34), the whoop averaged twenty-six days.

Group 2: In a somewhat different grouping, division was made into those that were mild in intensity before the vaccine treatment and those that showed a moderate or severe onset before treatment.

TABLE 4.—EXPOSED CHILDREN WHO ESCAPED WHOOPING COUGH (SEVENTY-NINE FAMILIES) ACCORDING TO AGE

	Year Under 1	1st	2d	3d	4th	5th	6th	7th	8th	9th	10th	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	Total
Nonvaccinated	7	2	6	7	6	11	9	9	14	8	10	7	11	4	7	6	8	3	3	2	4	144
1, 2 or 3 vaccinations of pertussis vaccine	3	2	3	2	3	3	4	2	1	2	4		1									30
1, 2 or 3 injections of influenza vaccine	1	4	1	3	3	3	1	1	1	1												19

In the mild cases treated with pertussis vaccine, whether injections were given before the whoop developed or during the first or second week of the whoop, it averaged twenty-five days. In similar cases treated with influenza vaccine, the whoop averaged thirty-nine days. In the controls (milk injections or terpin hydrate medication), the whoop averaged nineteen days.

In the cases with moderate or severe onset, treated with pertussis vaccine, the whoop averaged thirty-nine days. In similar cases treated with influenza vaccine, the whoop averaged thirty-one days. In the controls treated as above, the whoop averaged thirty-one days.

If we were to make our deductions of the values of the vaccines in these comparatively few cases, from the first arrangement of averages, we would have to infer that there was not much choice between pertussis and influenza vaccine, and that terpin hydrate by mouth or dilute milk injections were superior in curative effect to either.

From the second arrangement of averages, we would have to conclude that pertussis vaccine transcends influenza vaccine in the mild cases, and that influenza vaccine is more valuable in the moderate or severe cases.

It would seem fairer to draw our conclusions from a still different arrangement of our figures: a division into the degrees of intensity of the disease and, at the same time, a division into the stage of the disease in which the vaccine treatment was begun. If specific vaccines are valuable, they must prove their value when given early in the disease, and not during the height, just before the decline, or during the declining stage.

Group 3: After weeding out the questionable, unreliable and incomplete records, we divided the cases as mentioned above. We judged the intensity of the paroxysm by the degree of asphyxia exhibited by the color of the face and lips. Many cases can be vouched for as true cases since the patients were seen and heard to whoop in the clinic. The rest were judged by the mother's intelligence, by cross examinations, etc.

Of the mild cases, the average duration of the cough was from seven to eight weeks under both influenza and pertussis vaccine, except for those cases in which the injections were made during the second week of the whoop; in these the whoop under influenza vaccine runs about a week longer than under pertussis vaccine.

The whoop, in the cases in which pertussis vaccine was injected before the whoop appeared, averages about two weeks less than under influenza vaccine; when injected during the first week of the whoop, both pertussis and influenza vaccine seemed to act equally well; when injected during the second week, pertussis vaccine seemed to cut short the whoop by four weeks. In controls, however, untreated by vaccines, the whoop lasted only two or three weeks.

Vomiting is of about the same duration for both pertussis and influenza vaccine given before the whoop developed; less under pertussis vaccine than under influenza vaccine when given during the first week of the whoop; less under influenza vaccine given during the second week of the whoop and in the nonvaccinated control cases, the same as under pertussis vaccine given during the second week of the whoop.

In this series of cases, pertussis vaccine seems to have the advantage over influenza vaccine, and the nonvaccinated controls somewhat the advantage over both.

Of the moderate and severe cases, pertussis vaccine given before the whoop developed allows the average of the cough to run ten weeks, while influenza vaccine cuts it shorter by two or three weeks. Given during the first week of the whoop, the cough averages about the same length for both vaccines. Given during the second week of the whoop, the cough runs about a week longer under influenza vaccine. In the controls (nonvaccinated), the cough averages three weeks longer than the average of both vaccines.

TABLE 5.—CHILDREN WHO RECEIVED PROPHYLACTIC INJECTIONS

	Exposure in Family				Exposed to Neighbors			
	Pertussis Vaccine		Influenza Vaccine		Pertussis Vaccine		Influenza Vaccine	
	No. Cases	Aver. Duration, Wks.	No. Cases	Aver. Duration, Wks.	No. Cases	Aver. Duration, Wks.	No. Cases	Aver. Duration, Wks.
Three injections								
Simple cough...	12	5-6	6	6-7	2	2	1	<1
No cough.......	8	0	6	0	1	0		
Total.........	20	....	12	....	3	....	1	
Two injections								
Simple cough...	4	6-7						
No cough.......	1	0	1	0	1	0		
Total.........	5	....	1	....	1			
One injection								
Simple cough...	2	5-6						
No cough.......	..	....	2	0				
Total.........	2	....	2					
Terpin hydrate medication								
Cough..........	1	10-12						
Total.........	1							
Grand total.......	28	....	15	....	4	....	1	=16

The whoop averaged from five to six weeks with pertussis vaccine, whether given before the whoop developed or during the first or second week of the whoop, and in the first two instances runs about a week longer than under influenza vaccine. The controls run still a week longer.

The vomiting lasts longer under pertussis vaccine given before the whoop develops, or during the first week, and about the same under influenza vaccine treatment given during the second week of the whoop. The control cases run one or two weeks longer.

On the whole, in these cases, influenza vaccine seems to average more points than pertussis vaccine in relieving symptoms.

Before going further, we wish to repeat that we feel our numbers are too few to do more than demonstrate anew that deductions drawn from small numbers are faulty.

TABLE 6.—PROGRESS OF THE DISEASE AFTER THREE INJECTIONS OR VISITS, ACCORDING TO MOTHER'S OR GUARDIAN'S COMMENTS

Treated with	Total No. Cases	Improved		Slight Improvement		No Change		Worse	
		No.	%	No.	%	No.	%	No.	%
Pertussis vaccine	146	39	26.7	35	23.9	32	21.9	40	27.4
Influenza vaccine	113	31	27.4	37	32.7	15	13.2	30	26.5
Terpin hydrate medication or dilute milk injections........	15	5	33.3	2	13.2	4	26.6	4	26.6

Of the 274 cases tabulated, according to the mother's or guardian's opinions of the course of the disease, immediately after the third injection or third visit, the percentage of children reported distinctly improved is almost the same for both pertussis and influenza vaccine, with 0.7 per cent. in favor of influenza vaccine. (It must be acknowledged that one cannot rule out a favorable reaction from the protein of the influenza bacillus.)

Among those reported slightly better after the third injection, influenza vaccine was 8.8 per cent. more potent.

Of those reported stationary, influenza vaccine shows 8.7 per cent. fewer unchanged than pertussis vaccine.

Of those reported worse, there is 0.9 per cent. difference again in favor of influenza vaccine.

Needless to say, the mothers did not know that there were two vaccines used. Likewise, it must be mentioned that the influenza vaccine was more apt to give both a local and febrile reaction than the pertussis vaccine.

Of the nonspecifically treated controls (terpin hydrate medication or dilute milk injections), 5.9 per cent. more were said to be improved after the third visit than with influenza vaccine; 10.6 per cent. fewer were slightly improved than with the pertussis vaccine, and 4.9 per cent. more remained stationary. Practically the same number as under pertussis or influenza vaccine, about one fourth of the cases, progressed unfavorably.

Contrary to our impressions, the mothers' reports do not make out a case for pertussis vaccine. In the mild cases, in which water made slightly turbid with milk, and thought at the time to be a vaccine by both doctor and parent of the child, was injected before the whoop or paroxysmal cough developed or during the first week of the whoop, the trouble terminated in less time than in cases treated with either pertussis or influenza vaccine.

Of the twenty-seven patients receiving only two injections of vaccine, if either vaccine had any effect at all, influenza vaccine in some groups did as well as the pertussis vaccine, and often better.

Of the twenty-seven patients receiving only one injection the same may be said.

PROPHYLACTIC VALUE OF THE VACCINES; FAMILY IMMUNITY

Of the children exposed to whooping cough in their immediate family, nineteen received injections of influenza vaccine and thirty injections of pertussis vaccine. Some of these children had a mild bronchial cough at the time of inoculation. These coughs ran a variable time, but no case developed into a characteristic pertussis. These children were observed and visited in their homes for several months; none came down with pertussis. One child who had received one injection of pertussis vaccine contracted whooping cough two months afterward. Hoag reports seventeen cases in which persons injected prophylactically did not contract the disease. Luttinger gives a similar report. Hess reports that of 244 exposed patients (in an institution) inoculated prophylactically, twenty developed whooping cough.

TABLE 7.—DEATHS

Treatment	No. Cases	No Injections	When Begun	Last Injection	Date of Death	Cause of Death	Remarks
Pertussis vaccine........	1	4	1st day whoop	13th day whoop	13th day whoop?	Gastro-enteritis	Died in Metropolitan Hospital; full data not obtained
	1	3	14th day whoop	20th day whoop	1 month after cough stopped	Convulsion	Whoop lasted forty-three days and cough sixty-four days
	1	1	14th day whoop	....	3d after injection	Convulsion	
	1	1	7th day whoop	....	5 days after injection	Penumonia	
	1	3	14th day whoop	19th day whoop	5 weeks after injection	Pneumonia	
Total..................	5						
Influenza vaccine........	1	3	....	....	?	Unknown	Information from neighbors
	1	2	3d day paroxysmal cough	5th day paroxysmal cough	2 weeks after injection	Meningitic symptoms	Died on 18th day of paroxysmal cough; 15 days after 2d injection
	1	3	14th day whoop	19th day whoop	12 days after injection	Tuberculous meningitis or infantile paralysis (?)	Said to have had pneumonia day after last injection; convulsions and death 10 and 12 days later; died at Bellevue Hospital
	1	4	10th day whoop	20th day whoop	1 month after whoop stopped	Nephritis	
Total..................	4						
Terpin hydrate medication..................	1	.....	....	....	... .	Pneumonia and empyema	Died 85th day of cough

A NEW AND SUPERIOR MERCURIAL GERMICIDE

PRELIMINARY REPORT [*]

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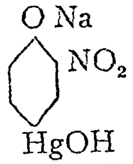
During the past two years the writers have been engaged in chemotherapeutic investigations, chiefly in connection with mercurial and arsenical compounds. We have elaborated a number of new compounds of mercury which we have tested out in experimental trypanosomiasis. We have also determined the germicidal activity of many of these substances against bacteria both in vitro and in vivo. By following certain favorable "leads" we have gradually arrived at the production of two organic mercurial compounds which exhibit remarkable germicidal properties in laboratory tests. One of these compounds, No. 99, possesses physical properties which render it specially available as a local antiseptic and germicide.

TABLE 1.—RESULTS OF ANTISEPTIC TESTS ON STAPHYLOCOCCUS AUREUS

No.	Name of Compound	Germicidal Dose, Gm.	Germicidal Dilution
99	Mercurophen..............	0.000001	1:10 000,000
105	New mercury compound...	0.000001	1:10 000,000
	Mercuric chlorid..........	0.00005	1:200,000

By reason of difficult solubility, No. 105 is not so adaptable for this purpose. No. 99, sodium oxymercury-orthonitro phenolate. For convenience the name mercurophen will be used temporarily. It contains about 53 per cent. of mercury, having substantially the structural formula:[1]



As yet we are not positive as to the structure position of the mercury. It occurs in the form of an odorless, brick red powder which is freely soluble in water; dilute solutions are amber-yellow. It may be readily molded in tablets, and in this form dissolves with great rapidity.

In view of the fact that our country is now at war with a foreign power, we have hastened this publication. We have recently placed our compound in the hands of a number of Philadelphia surgeons, with the purpose of having a determination of its clinical uses and value made as quickly as possible. If the clinical results in any manner approximate the laboratory findings, we shall immediately place the product at the disposal of the medical services of the army and navy. Indeed, an investigation of certain properties of this compound is now being conducted by the U. S. Hygienic Laboratory.

RESULTS OF DISINFECTION TESTS

The germicidal activities of the new mercurial compounds were compared with mercuric chlorid in a large series of experiments in which various methods were employed, with the purpose of determining their comparative values from the standpoint of practical disinfection under different conditions.

(*a*) *Results With the Antiseptic Test.*—In what we have called an "antiseptic test," small numbers of the test micro-organism were exposed to high dilutions of the disinfectant over a long period of time. This technic has yielded us constant and decisive results, and has been found to be well adapted for comparative tests of the germicidal activity of new compounds in vitro in a menstruum of broth.[1]

TABLE 2.—BACTERICIDAL ACTIVITY OF PHENOL AND MERCURIAL COMPOUNDS ON STAPHYLOCOCCUS AUREUS IN A MENSTRUUM OF ASCITES FLUID (PIPET METHOD)

Chemical Compound	Bactericidal		Mercuric chlorid Coefficient (5 Min.)
	5 Min.	30 Min.	
New mercury compound No. 99 (mercurophen)	More than 1:1,600,000	More than 1:1,160,000	200
New mercury compound No. 105..........................	1:400,000	1:1,160,000	50
Mercuric chlorid............	1:8,000	1:32,000	
Phenol (carbolic acid).......	Less than 1:40	Less than 1:40	

The results of numerous antiseptic tests with the new mercurial compounds and mercuric chlorid broth cultures of *Staphylococcus aureus* being employed, are summarized in Table 1. As shown in this table, the new compounds exhibit an extremely high disinfectant value in a menstruum of broth, and are at least fifty times more active than mercuric chlorid under these conditions.

(*b*) *Results of Disinfection Tests in a Menstruum of Ascites Fluid.*—As the disinfectant power of a substance is likely to be less pronounced in a menstruum rich in protein, as serum or ascites fluid, as compared with a menstruum of salt solution or broth, we have determined the disinfectant activity of the new mercurial compounds and mercuric chlorid in a menstruum of ascites fluid with the pipet method,[2] modified after that of Wright.[3] The results of these

TABLE 3.—PHENOL COEFFICIENTS OF MERCURIAL COMPOUNDS FOR B. TYPHOSUS BY THE RIDEAL-WALKER METHOD

Name	Dilution	Exposure in Minutes						Phenol Coefficients (15 Min.)
		2½	5	7½	10	12½	15	
Phenol	1:20	+	+	—	—	—	—	
	1:30	+	—	+	—	—	—	
	1:40	+	+	+	+	+	—	
	1:60	+	+	+	+	+	+	
	1:80	+	+	+	+	+	+	
No. 99 (mercurophen)	1:50,000	—	—	—	—	—	—	10,000
	1:100,000	—	—	—	—	—	—	
	1:200,000	—	—	—	—	—	—	
	1:400,000	+	+	+	+	+	—	
	1:800,000	+	+	+	+	+	+	
No. 105	1:50,000	—	—	—	—	—	—	10,000
	1:100,000	—	—	—	—	—	—	
	1:200,000	—	—	—	—	—	—	
	1:400,000	+	—	—	—	—	—	
	1:800,000	+	+	+	+	+	+	
Mercuric chlorid	1:2,000	—	—	—	—	—	—	300
	1:4,000	—	—	—	—	—	—	
	1:6,000	—	—	—	—	—	—	
	1:8,000	+	—	—	—	—	—	
	1:12,000	+	+	+	+	+	—	
	1:16,000	+	+	+	+	+	+	

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[*] From the Dermatological Research Laboratories of the Philadelphia Polyclinic and College for Graduates in Medicine.

[1] Schamberg, J. F., and Kolmer, J. A.: The Germicidal Activity of Calomel, The Journal A. M. A., June 20, 1914, p. 1950. Kolmer, J. A.; Cohen, S. S., and Heist, G. D.: Jour. Infect. Dis., 1917, **20**, 293.

[2] Kolmer, Cohen and Heist (FFootnote 1). Schamberg, J. F.; Kolmer, J. A., and Raiziss, G. W.: Am. Jour. Syph., 1917, **1**, 1.

[3] Wright, A. E.: Technique of the Test and Capillary Glass Tube, London, Constable & Co., 1912.

comparative tests are summarized in Table 2, and show that our new mercury compound No. 99 (mercurophen) is 200 times more active than mercuric chlorid, and the new compound No. 105 is fifty times more active than mercuric chlorid in a menstruum of serum proteins. It is apparent, therefore, that the new compounds possess less affinity for the serum proteins than is shown by mercuric chlorid, and this has been demonstrated in precipitation tests (Table 8).

(*c*) *Results with the Rideal-Walker Method.*—In this method, which is similar to the Hygienic Laboratory method, the test micro-organism (*B. typhosus*) is exposed for short periods of time to large amounts of disinfectant in water at 20 C., and the results expressed in comparison with the disinfectant power of standard solutions of phenol (phenol coefficient). The results of a set of experiments in which mercurophen, new mercurial compound No. 105, and mercuric chlorid were employed, are shown in Table 3. As shown in this table, both mercurophen and the new mercurial compound No. 105 are 10,000 times more active in this test than phenol, and more than thirty times more active than mercuric chlorid.

(*d*) *Results of Hand Disinfection Tests.*—For the purpose of determining the approximate disinfectant activity of the new mercurial compounds on the skin under ordinary conditions, a series of experiments were conducted on the hands of a number of persons (laboratory assistants).

TABLE 4.—RESULTS OF HAND DISINFECTION TESTS *

No. of Compound	Name of Compound	Dilutions	Exposure in Minutes†		
			1	5	15
99	Mercurophen..............	1:5,000	—‡	—	—
99	Mercurophen..............	1:10,000	—	—	—
105	New mercury compound...	1:5,000	—	—	—
105	New mercury compound...	1:10,000	—	—	—
	Mercuric chlorid...........	1:5,000	+	+	—
	Mercuric chlorid...........	1:10,000	+	+	+

* All cultures of hands before immersion in these disinfectants showed heavy growths. In this table, — denotes sterile, and + growth.

† Solutions of disinfectant, from 38 to 42 C.

‡ Cultures made in glucose broth with sterile swabs; results after forty-eight hours' incubation.

In one series the hands were first cultivated by rubbing the skin in a vigorous manner with a sterile swab moistened with sterile broth and inoculating tubes of sterile glucose broth; this was followed by immersion of the hands in vessels containing a solution of the disinfectant in distilled water at a temperature of from 38 to 42 C. At intervals of one, five and fifteen minutes the hands were quickly flushed with sterile distilled water from a pipet to remove the disinfectant and cultivated in the same manner. The results of a number of these experiments are expressed in Table 4, in which it was found that 1:5,000 and 1:10,000 solutions of mercurophen (No. 99) and new mercurial compound No. 105 sterilized the skin under these conditions in an exposure of one minute, whereas mercuric chlorid in a 1:5,000 dilution required an exposure of over five minutes, while a 1:10,000 dilution failed to sterilize in an exposure of fifteen minutes.

Further experiments have shown that mercurophen (No. 99) is capable of sterilizing the skin of the hands in an exposure of one minute in a dilution as high as 1:40,000 and the new mercurial compound (No. 105) in dilution up to 1:80,000, whereas mercuric chlorid fails to accomplish these results in a dilution of 1:5,000 under identical conditions (Table 5).

(*e*) *Results of Disinfection Tests With Rubber Tubing.*—In order to determine the disinfectant value of the new mercurial compounds for rubber, particularly catheters, pieces of ordinary rubber tubing 100 mm. in length (5 mm. bore and 3 mm. wall) were immersed in varying dilutions of the new mercurial compounds and mercuric chlorid in distilled water at room temperature for a period of thirty minutes, followed by thorough washing with sterile distilled water and cultivating in large tubes of glucose broth for seventy-two hours. Controls were included in each experiment, consisting of tubing placed in sterile distilled water alone, and always showed heavy growths of various cocci and bacilli. The results of numerous experiments were similar to those shown in Table 6, indicating that solutions of mercurophen (No. 99) and new mercurial compound No. 105 sterilized the rubber tubing under these conditions in dilutions as high as 1:100,000.

TABLE 5.—RESULTS OF HAND DISINFECTION TESTS *

Dilutions	Exposure of One Minute†		
	No. 99	No. 105	Mercuric chlorid
1:5,000	—‡	—	+
1:10,000	—	—	+
1:20,000	—	—	+
1:40,000	—	—	+
1:80,000	+	—	+

* All cultures made of hands before immersion showed heavy growths; — denotes sterility, and +, growth.

† Solution of disinfectant, 42 C.

‡ Cultures made in glucose broth with sterile swabs; results after twenty-four hours' incubation.

In a second series of experiments the pieces of rubber tubing were purposely infected beforehand by immersion for seventy-two hours in mixed broth cultures of *Staphylococcus aureus* and *B. subtilis* (a spore-forming micro-organism). The results of these experiments are also shown by the results expressed in Table 6, and indicate that while 1:500 dilution of mercurophen (No. 99) and No. 105 were required to bring about sterilization in a thirty-minute exposure, mercuric chlorid failed in dilution as low as 1:50.

(*f*) *Results of Disinfection Tests With Feces.*—In order to determine the disinfectant value of the new mercurial compounds in the presence of considerable protein material, as an indication of their practical value in the disinfection of feces (such as the bowel discharges of persons with typhoid fever), a series of experiments were conducted as follows:

TABLE 6.—SUMMARY OF RESULTS OF GERMICIDAL TESTS WITH RUBBER TUBING AND NEW MERCURIAL COMPOUNDS

No. of Compound	Name of Compound	Results after Exposure of 30 Minutes	
		With Ordinary Rubber Tubing	WithHeavily Infected* Rubber Tubing
99	Mercurophen..................	1:100,000	1:500
105	New mercurial compound......	1:128,000	1:500
	Mercuric chlorid..............	1: 16,000	Not in 1:50

* Infected by immersing the tubing in broth cultures of Staphylococcus aureus and B. sublitis for seventy-two hours prior to the germicidal tests.

One gm. of fresh human feces was added to 100 c.c. of a 1:2,000, 1:5,000, 1:10,000 and 1:20,000 solution of mercurophen (No. 99), new mercury compound No. 105 and mercuric chlorid, respectively, at room temperature, and thoroughly emulsified; at intervals of five, fifteen, thirty, forty-five and sixty minutes, 0.1 c.c. of each of the foregoing emulsions was placed in sterile Petri dishes and mixed with 10 c.c. of agar at 42 C. After forty-eight hours' incubation, the plates were counted. Controls were prepared by emulsifying 1 gm. of feces in 100 c.c. of sterile distilled water and plated at the same intervals. All of the control plates were uncountable, owing to the presence of large numbers of colonies.

The results of a series of experiments similar to those shown in Table 7 indicated that thin and thoroughly mixed dilutions of feces and mercurophen (No. 99) 1: 5,000, and new mercurial compound No. 105 (1: 5,000) in water, will result in the sterilization of the feces at room temperature in periods of thirty minutes or less, whereas a dilution of 1: 2,000 mercuric chlorid was required to bring about similar results.

TABLE 7.—RESULTS OF DISINFECTION OF FECES

No. of Compound	Name of Compound	Final Dilution	Exposure in Minutes				
			5	15	30	45	60
99	Mercurophen....	1:5,000	Unc.*	6,000†	Sterile	Sterile	Sterile
105	New mercury compound.....	1:5,000	Sterile	Sterile	Sterile	Sterile	Sterile
105	New mercury compound.....	1:10,000	Unc.	16,000	10,800	200	10
105	New mercury compound.....	1:20 000	Unc.	Unc.	Unc.	Unc.	6200
	Mercuric chlorid	1:5,000	Unc.	Unc.	Unc.	7500	480
	Mercuric chlorid	1:2,000	8,000	3,000	Sterile	Sterile	Sterile

* Uncounted. † Colonies in the plate.

THE PRECIPITATING ACTIVITY OF MERCURIALS ON HUMAN SERUM PROTEINS

As previously stated, the disinfectant activity of mercurophen and the new mercurial compound (No. 105) are maintained to a remarkable degree in a menstruum rich in serum proteins. This property is one of great value, particularly in the treatment of infectious material in which large amounts of protein are present.

In order to determine further the precipitating activity of these new mercurial compounds, a series of experiments was conducted as follows: A series of dilutions of mercurophen (No. 99), new mercurial compound No. 105 and mercuric chlorid in distilled water, in amounts of 0.5 c.c., were placed in small test tubes; to each tube and to the controls (of distilled water alone) was added 0.5 c.c. of fresh clear human blood serum followed by gentle mixing. An immediate clouding and precipitate followed in the majority of the tubes containing mercuric chlorid; the results are shown in Table 8 after the tubes had been standing at room temperature for twenty-four hours.

As shown in this table, mercuric chlorid produced visible precipitation in dilution as high as 1: 1,000, whereas mercurophen (No. 99) failed to produce any visible precipitation in dilutions as low as 1: 300 and the new mercurial compound (No. 105) produced no precipitation in dilutions as low as 1: 400 (lower dilution could not be used as clear solutions of this compound in distilled water could not be obtained lower than 1:200).

THE NONCORROSIVE EFFECT OF THE NEW MERCURIAL COMPOUNDS

As is well known, the ordinary mercurial compounds, particularly mercuric chlorid, have a marked tendency to corrode metals by producing amalgam compounds; therefore these substances cannot be used to sterilize surgical instruments. Experiments to determine the corrosive action of mercurophen (No. 99) and new mercurial compound No. 105 have shown both of these substances to be free of corrosive action in dilutions as low as 1: 500 and with exposures as long as twenty-four hours. New nickel plated and highly polished surgical instruments immersed in 1: 5,000 solutions of mercurophen (No. 99) and new mercurial compound No. 105 for twenty-four hours showed absolutely no evidences of tarnishing. With old instruments in which the plating had been partly removed and the underlying metal exposed, varying amounts of rust were produced during the twenty-four hours as a result of the action of the water used in the preparation of the solutions.

CONCLUSIONS

1. Mercurial compound No. 99 sodium oxymercury-orthonitro phenolate (mercurophen) exhibits against the *Staphylococcus aureus*, in the "antiseptic test," fifty times greater activity than mercuric chlorid; it destroys these bacteria on prolonged exposure in boullion in a dilution of 1: 10,000,000.

2. In a menstruum of ascites fluid, mercurophen is 200 times more germicidal against the *Staphylococcus aureus* than mercuric chlorid.

3. By the Rideal-Walker method, mercurophen exhibits 10,000 times greater germicidal power against the *Bacillus typhosus* than phenol, and over thirty times greater activity than mercuric chlorid.

4. Mercurophen disinfects the hands in dilutions of from 1: 10,000 to 1: 40,000 in one minute, whereas mercuric chlorid in a dilution of 1:5,000 requires over five minutes, and in a dilution of 1:10,000 requires over fifteen minutes.

5. Mercurophen sterilizes ordinary rubber tubing in thirty minutes in a dilution of 1:100,000. Mercuric chlorid accomplishes this result in a dilution of 1: 16,000. With tubing heavily infected with cocci and spores, mercurophen requires a 1:500 solution and mercuric chlorid fails in a 1: 50 solution.

TABLE 8.—PRECIPITATING ACTIVITY OF MERCURIALS ON HUMAN SERUM PROTEINS *

Final Dilution	Compounds		
	No. 99	No. 105	Mercuric Chlorid
1:200	+	0	++
1:300	—	0	++
1:400	—	—	++
1:600	—	—	++
1:800	—	—	++
1:1,000	—	—	++
1:1,200	—	—	+
1:2,000	—	—	—

* In this table, ++ denotes heavy precipitate; +, slight precipitate, and —, no precipitate. Controls showed no precipitate.

6. Mercurophen in a 1: 5,000 solution sterilizes feces in thirty minutes; mercuric chlorid accomplishes this result in a 1: 2,000 solution.

7. The precipitating effect of mercuric chlorid on human serum proteins is four to five times greater than that exhibited by mercurophen. This is an obvious advantage possessed by the latter substance.

8. Solutions of 1:5,000 of mercurophen exhibit no evidence of tarnishing on nickel plated instruments after twenty-four hours' exposure.

9. In experiments not detailed here, mercurophen administered intravenously in rabbits has a lower toxicity than mercuric chlorid.

PERTUSSIS VACCINE

ITS VALUE AS A CURATIVE AND PROPHYLACTIC AGENT IN WHOOPING COUGH[*]

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The discontinuance of the whooping cough clinic, which had been maintained by the department for over two years, brought to an end the experimental administration of pertussis vaccine by the Bureau of Laboratories. At the request of Dr. William H. Park, under whose supervision the work had been carried out, a report covering the major part was prepared, and a digest of it will form the first part of this article.

Owing to the fact that, since the publication of the department's first report, some investigators had not obtained decisively good results, it seemed desirable that an attempt be made to summarize the experiences of all those to whom we had supplied our pertussis vaccine. A circular letter was mailed, therefore, to 250 physicians enclosing a questionnaire on the action of pertussis vaccine as compared to drug treatment in whooping cough. Over 180 replies reached us up to January 10. These reports form the second part of the article.

I. Results Obtained at the Whooping Cough Clinic

The clinical material was about the same as that of any dispensary on the East Side, with a sprinkling of patients from other parts of the city and even suburban towns. From an experimental point of view this material leaves much to be desired, and the conclusions to be drawn must, perforce, be limited. Thus, less than half of the 5,000 odd patients who applied for treatment were available for study. The rest had to be discarded on account of incomplete attendance, lack of reliability of guardian, erroneous diagnosis, or for other reasons.

TABLE 1—AVERAGE DURATION OF CASES TREATED WITH VACCINE, AS COMPARED TO THOSE TREATED WITH DRUGS

Treatment	No of Case	Time Treatment Began During Paroxysmal Stage						
		½ week	1½ weeks	2½ weeks	3½ weeks	1½ months	3d month*	6th month or over*
Vaccine	952	210	303	196	151	54	36	22
Average duration of paroxysmal stage (in days)	37	22	16	26	45	64	89	322
Drugs	149	39	25	24	50	5	3	3
Average duration of paroxysmal stage (in days)	50	40	52	39	40	82	102	361

* The figures in these two columns are given only for the sake of completeness, the duration being too variable for any definite conclusion.

Besides the element of uncertainty which enters into all clinical observations, even the best controlled, one must reckon, in this case, with a heterogeneous class and large number of observers on whom we had to rely for the history, course of disease, severity of paroxysms, etc The conception of different parents and guardians of the severity and symptoms of a disease is naturally apt to be more than divergent and often inaccurate.

Fortunately, I have had the rare opportunity of being in actual attendance at the clinic for the last two years, and this uninterrupted service has enabled me to learn to discriminate between certain groups of patients. Nevertheless, I should be loath to ascribe to my interpretations anything but a relative value.

The numerous tables as well as the record cards on which this digest is based are on file at the Bureau of Laboratories, and it was thought best to leave most of them out of this study. They are elaborate and lengthy, and would necessarily tax the energy of the compositor and the reader. The same considerations have actuated me in giving round figures only. Whenever the decimals exceeded 0.5, a unit was added to the figure, while lesser decimals were discarded.

A. CURATIVE CASES

The number of curative cases tabulated amount to 1,101, of which 952 were treated with pertussis vaccine (three or more injections) and the rest (149) with drugs. We had planned at the outset to have an equal number of cases of each class; but we found it difficult to carry out this plan in practice. In the early days of the clinic we had an overwhelming number of drug cases because parents did not trust the "needle" treatment. Later on, with the increasing popularity of the vaccine treatment, it became difficult to secure an adequate number of control cases. Guardians could not be persuaded to go home without an injection, and refusal to give it to their charges would invariably result in lack of attendance.

Duration.—The total average duration of the paroxysmal stage of the 952 vaccine cases, irrespective of the time when treatment was begun, was nearly thirty-seven days, while the 149 drug cases had an average duration of over 50 days.

The paroxysmal stage of pertussis is given by various authorities as from 4 to 6 weeks; and since many of the patients who applied for treatment were whooping for a longer period (some even as long as ten or twelve months, according to the guardian), it would be manifestly inaccurate to pass on the duration of the paroxysmal stage without taking into consideration the length of time elapsed before treatment was begun.

This becomes evident by a glance at Table 1, which shows the total average duration of cases treated with vaccine, as compared to those treated with drugs.

This table seems to indicate that the second week of the paroxysmal stage happened to be most favorable for vaccine treatment, the duration being a little over sixteen days for cases whose treatment began about the tenth day. In averaging up all the cases in which vaccine treatment was instituted before the expiration of the third week of paroxysms, we obtain a decidedly low figure as compared to similar cases under drug treatment. The 709 cases in which pertussis vaccine was given before the end of the third week had an average duration of a little over twenty days, while the eighty-eight patients treated with drugs whooped for nearly thirty-two days.

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[*] From the Bureau of Laboratories, Department of Health, City of New York

[*] Summary of the results obtained by the Bureau of Laboratories of the New York Department of Health and of over 180 private physicians and health officers

[*] Owing to lack of space, this article is abbreviated in THE JOURNAL by omission of tabulated physicians' reports on pertussis vaccines The complete article appears in the reprints, a copy of which will be sent by the author on request.

Before these figures were tabulated, our impression had been that the *earlier* vaccine treatment is started, the better; but this table shows that there may be such a thing as starting *too early.* If this is a fact, I have no explanation except perhaps the old one of the "negative phase." It is quite possible that, in the first week of the paroxysmal stage, the organism is at its lowest as far as its active immunity-producing power is concerned, and if this is so the administration of vaccine may cause more reaction than is necessary. This assumption might explain some very protracted and complicated cases in which vaccine is begun during the first week of the whoop; but it would not explain the protracted cases treated with drugs.

The fourth week of the whoop seems to be slightly more favorable for the drug than the vaccine treatment. I am at a loss to explain this seeming paradox, otherwise than by ascribing it to mere accident. This exception, however, should not invalidate the claims made for the superiority of the vaccine over drug treatment. One must bear in mind that in every class of the cases, whether treated by vaccine or by drugs, in the first week or after a history of twelve months of whooping and vomiting, we had patients who would stop whooping within a week of treatment. This only illustrates the value of a large number of cases for the correct interpretation of the action of a new therapeutic agent.

Severity of Paroxysms.—More significant, perhaps, than the shortening of the paroxysmal stage, is the influence of vaccine on the severity and frequency of paroxysms. The striking amelioration in the general well-being of the patient, the return of sleep, appetite and the prompt cessation of vomiting has been commented on by nearly all those who have had occasion to administer pertussis vaccine. This is more constant than the shortening of the disease, as may be seen from the reports of the physicians given in Table 4.

In a large majority of cases the mother or guardian would begin her first report by saying: "The child slept much better after the injection." The only exceptions to this rule were the few cases which showed marked reactions. In cases treated with drugs, the severity is not abated but the frequency of the paroxysms is lessened as long as the treatment is continued. The withdrawal of antipyrin, however, invariably marks a recrudescence in the frequency of the paroxysms.

Complications and Sequelae.—These were few in both the vaccine and the drug cases. We have records of only nineteen deaths among 5,000 patients treated with vaccines (twelve from bronchopneumonia, six from convulsions, one unknown) and twenty-two deaths among the 300 odd cases treated with drugs (14 from bronchopneumonia, eight from convulsions). Most of these deaths occurred in the first week of the treatment before either the vaccine or antipyrin could have had any action.

The postparoxysmal cough, however, is distinctly shortened under vaccine treatment.

The question of complications and sequelae has not been thoroughly studied, and would bear further investigation.

HOSPITAL CASES

We have on file sixty cases of whooping cough, in practically all of which the patients whooped over three weeks, treated with pertussis vaccine at the Willard Parker Hospital without apparent improvement. Dr. Goldstein, who has studied these cases, does not think that the vaccine has any influence in chronic cases. The figures in Table 1 would seem to show that these chronic cases do better than under drug treatment. Our Dr. Abramson, however, who has taken special interest in these chronic whoopers, is of the opinion that they are distinctly benefited by pertussis vaccine.

It is quite possible that certain factors in routine hospital handling would tend to impair the resistance of the patient and thereby lower the power to produce immune bodies. I have previously drawn attention to the factor of ventilation. One may also add the liability of hospital cases to have severer and complicated attacks, and also the possibility of a weakened physique due to inadequate nursing and poor economic surroundings previous to admission.

INCOMPLETE CASES

In addition to the complete cases (that is, those in which the patients received at least three vaccine injections and whose subsequent history was followed up) there are a large number in which the patients either (*a*) had only one or two injections, or (*b*) were treated first with drugs and later with vaccines or vice versa.

TABLE 2.—AVERAGE DURATION OF CASES TREATED IN 1915, ACCORDING TO MONTH WHEN TREATMENT BEGAN

Month	Duration of Paroxysmal Stage (Days)	
	Vaccine	Drugs
January	28	68
February	25	46
March	27	45
April	23	54
May	28	53
June	26	40
July	32	48
August	46	52
September	29	49
October	32	53
November	35	55
December	30	65

(*a*) With the exception of some of the chronic cases referred to, one or two injections had no effect on the duration of the disease. The severity of the paroxysms, however, seems to be modified even by one injection. The duration of the whoop, as well as that of the first paroxysmal stage, seems to be the same as that of drug cases or in many cases (40 per cent.) actually higher. Lack of proper care might explain this.

(*b*) The thirty-nine mixed cases have to be looked on as failures of the vaccine as well as the antipyrin treatment. Their total average duration was fifty-nine days of paroxysmal cough. The patients who had to be switched over from one treatment to another were such as seemed to "go to pieces." Ten of them died subsequently (six from bronchopneumonia, one from measles, two from convulsions, one from poliomyelitis).

Effect of Season on Treatment.—Owing to the fact that most fatalities occur in August, it seemed desirable to tabulate the results of both vaccine and drug treatment according to the month in which treatment began. Table 2 shows the average duration of the cases treated during each month for the year 1915.

While it would be rash to draw any definite conclusions from this table, which contains complete figures for the year 1915 only, it is nevertheless interesting to note that the duration of the vaccine cases tends to follow the usual curve of the yearly late spring and summer recrudescence of the disease. Thus the highest average duration of vaccine cases occurs in those treated during the month of August. The cases treated with drugs, on the other hand, attain the longest duration in January, with high points in December and November; the months of October, April, May and August show also a very long duration, that is, higher than the general average of fifty days, while only the month of August shows a higher figure than the general average of thirty-seven days for vaccine cases.

As to the duration of the paroxysmal stage under vaccine treatment, depending as it does on the time treatment is instituted, the information gained from this table would be incomplete unless the duration of the disease before admission should be tabulated for each month. This would necessitate an enormous amount of labor, which for various reasons had to be relegated to the future.

Types of Vaccine.—It is equally regrettable that no minute comparative study of the various vaccines supplied to the clinic by Dr. Anna W. Williams could be made. The floating clientele of the dispensary, and the lack of sufficient time and help to do the necessary follow-up work seemed to combine against a thorough investigation. Besides, it is not always possible to continue the injection of a vaccine which appears to aggravate the condition of the patient, especially when this patient is a child, helpless and poor. A good deal of switching, therefore, from one vaccine to another occurred.

A solution of sterile milk, however, which was sent to the clinic having the same appearance as the regular pertussis suspension was promptly recognized, owing to the negative results and to some quite marked reactions.

With this exception, all other vaccine seemed to be equally potent, except old strains or old suspensions of new strains of pertussis bacilli. This is merely an impression, as I have no reliable figures on the subject. The results of an influenza vaccine collated by one of our workers are said to be equally good. While it is not out of the range of possibility that any protein may help to increase the general resistance of the body, our figures are too few to support Vaughan's theory. On the other hand, some of those cases which seem absolutely refractory to pertussis vaccine may really be influenza infections, and in such cases an influenza vaccine could be of value.

Dosage.—It seems that at least three injections are necessary to make a lasting impression on the disease. Cases in which recovery took place too quickly, that is, after the *first injection*, were classified as doubtful, and are not included in this study.

During 1916 we found that some patients would have a relapse from two months to five days after the cessation of paroxysms. The following successful procedure was, therefore, adopted to ward off any recurrence:

> To a child over a year old, an initial injection of 500 million bacteria is given; at the end of forty-eight hours another dose containing 1 billion is administered, and after the lapse of another forty-eight hours 2 c.c. (2 billion) are injected subcutaneously.
>
> After an interval of five days the child is examined again, and if the paroxysms and the vomiting have ceased, is treated with cod liver oil or other tonics. If the paroxysms are much milder but still persist, a dose of 4 billion vaccine is given, followed by 8 billion in three days, and 10 billion after another lapse of three days.
>
> Should the paroxysms become more violent after the first three injections, a week would be allowed to elapse before the second series of three injections are given, and instead of 4 billion this series is started with only 2 billion.

B. PROPHYLAXIS

Over 600 children were given prophylactic injections of pertussis vaccine; not all, however, gave a clear history of exposure. In Table 3 only those who were actually exposed to members of their own family or playmates living next door for two weeks or less have been considered. These 368 cases, as will be seen from the table, were divided in two classes: (*a*) those already showing symptoms of the disease, such as cough and even slight vomiting, to whom the vaccine was given with the intention of aborting the disease, and (*b*) those who, although exposed constantly to the disease for two weeks or less, had not developed any symptoms, and to whom the administration of pertussis vaccine was intended to act as a true prophylactic.

Thus nearly 37 per cent. of the patients treated with vaccine contracted pertussis, while over 63 per cent. did not. Out of those showing symptoms, nearly 47 per cent. contracted it, while in over 53 per cent. the disease was apparently aborted. The patients showing no symptoms whatever were nearly all protected (94 per cent.). This would tend to show that once the disease has invaded the organism it is much harder to prevent the development of the paroxysms than in cases free from symptoms. All those treated with drugs, eleven cases in all, seven showing symptoms and four not showing any, contracted the disease except one patient, who showed no symptoms. The duration of the ten drug cases averaged fifty days of paroxysmal cough.

TABLE 3.—PROPHYLACTIC CASES

	Number Contracting Pertussis	Duration, Days	Number not Contracting Pertussis
Number of cases showing symptoms. 277	130	17	147
No symptoms 91	5	17	86

These figures should be read in the light of our epidemiologic studies, which have taught us that there are quite a number of children who seem to be naturally immune to the disease.

That the vaccine acted as a real prophylactic in many cases may be assumed from the following fact: nine of the patients who did not contract pertussis developed more or less severe subconjunctival hemorrhages but *no other symptoms*. The textbooks ascribe these hemorrhages wholly to the violence of the cough, which ruptures the tiny blood vessels of the conjunctiva. These nine cases, together with a few others which were observed in very mild attacks of whooping cough, would warrant the revision of this theory. It would be more likely to assume that the Bordet-Gengou bacillus produces some toxin which acts on the walls of special blood vessels, causing a extravasation of the blood.

Another significant fact brought out by Table 3 is the duration of the paroxysmal stage among those who contracted the disease. It is almost the same in both classes, a little over seventeen days in those who showed no symptoms and slightly less than seventeen days in those who already had some symptoms. In both classes the attacks were very mild, while in the few cases treated with drugs not only was the average duration a little longer than that of the curative cases but also the severity remained unaffected.

It is interesting to note that the duration was still a trifle higher in the prophylactic cases (those treated in the preparoxysmal stage) than in those treated in the second week of the paroxysmal stage.

II. Results Obtained by Private Physicians and Health Officers

A. CURATIVE

Table 4 shows in detail the results obtained by private physicians and health officers in the use of the stock vaccines from our laboratory. I need only add that they corroborate the findings at the whooping cough clinic.

Thus out of the 2,364 cases reported, the results were found to be satisfactory or excellent in 2,047 (87 per cent.) and negative or doubtful in a little over 13 per cent. (317 cases). Owing to temperamental differences in the interpretation of results, we have classified all returns marked "good," "fair," "satisfactory," "excellent," etc., under the heading "good results," which means superior to those obtained with drugs.

The results obtained at some other dispensaries are claimed to have been much better than at the whooping cough clinic. Notably Dr. Hoag,[1] at the Wilkes Dispensary, by using larger doses and by securing a more perfect attendance, has been able to reduce the duration to from sixteen to twenty days. Dr. H. L. F. Locke will shortly publish his results with our vaccine at the Hartford Isolation Hospital, Hartford, Conn.

Of the 1,314 institutional cases reported, nearly all the patients have been considered as benefited by the vaccine, as compared to the drug treatment which had been administered for years. The results in 499 of these cases (39 per cent.) were excellent, and the rest satisfactory, with the exception of sixty-seven doubtful and negative cases, mostly in hospitals.

In tabulating these results I have used the reporter's final estimation of his results, even when they apparently contradicted previous reports. Thus, Dr. S. Ginsburg's fifty cases were classified in the "doubtful" column, although previous written and verbal reports included several excellent results.

B. PROPHYLACTIC

Of the 239 cases listed in the prophylactic column, 216 (90 per cent.) were apparently protected, the results in twenty-one were negative (no history given), and in two, doubtful.

Besides these actual cases, some physicians, in answer to the question whether or not the vaccine was used prophylactically, merely answered "Yes" without giving the number of cases treated. The results obtained were given as: fair, satisfactory, apparently prevented, completely satisfactory, best as prophylactic, good, better than curative, twenty reports (number of cases unknown); doubtful, three reports; negative, two reports; total reports, twenty-five.

Complications and Sequelae. — Hardly any were noticed under vaccine treatment.

Reactions.—A few slight local and occasional rises of temperature in rare cases.

Conclusions

The results obtained at the whooping cough clinic and by over 180 private physicians and health officers would warrant the routine administration of pertussis vaccine for both curative and prophylactic purposes.

The best time to institute the vaccine treatment, except as a prophylactic, is the first and second week of the paroxysmal stage.

When the proper vaccine is given and the method of the department is employed, the disease is materially reduced in duration and severity.

The presence of subconjunctival hemorrhages in prophylactic cases which were protected by the vaccine seems to point to its specific immunizing action against the paroxysms and to the fallacy of the hitherto accepted theory that these hemorrhages are due to the violence of the cough.

1265 Boston Road.

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[1] Hoag, W. B.: Am. Med., New Series, 1916, 11, 255-265.

DIAGNOSTIC GROUPS OF CHRONIC GASTRIC DISEASE *

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In textbooks, diseases of the stomach are classified with apparent ease; but in practice one soon learns that cases are not fitted so readily into the place in which they belong. In fact, the decision as to what an individual case of "stomach trouble" really means from the standpoint of pathology is often one of the most difficult problems in medicine. Dyspepsia, indigestion and stomach trouble are all common complaints; but the physician's task is to decide what they signify and what organic change underlies and produces them.

In general the questions to be answered are these: 1. Are the symptoms really due to disease of the stomach itself, or only to disturbed function produced by disease elsewhere? 2. If the disease is actually in the stomach, what is its character? According to the answer to these questions, cases fall into more or less well defined diagnostic groups; but to recognize what place shall be assigned in the grouping is rarely easy and not always final, for subsequent developments may entirely change the conception and cause us to shift the diagnosis from one group to another.

The difficulties stand out more and more prominently, as experience grows; and the larger the number of patients seen, the more firm the conviction that error in interpretation is possible, even with the utmost care and attention to detail. These thoughts have prompted me to review the cases of chronic gastric disease observed during the past five years, from Jan. 1, 1912, to Jan. 1, 1917; to show what conclusions have been reached in patients presenting themselves for diagnosis; what diagnostic groups have been found practical, and by what characteristics these groups have been segregated. In all, 2,116 records have been collected in private practice during these five years, all of diseases of internal organs; and of these, 297 have been classified as gastric. This does not include the patients with gastric symptoms that proved ultimately to be due to disease of appendix or gallbladder or some other organ, but only those in whom, after careful sifting of all data, the stomach itself was considered to be the organ diseased.

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* Read before the Sacramento Society for Medical Improvement, Sacramento, Calif., March 17, 1917.

GROUP 1: GASTRIC CANCER

This group makes the best point of beginning, because it is the most definite and affords least opportunity for error. The symptoms progress so rapidly and are so marked that they cannot be overlooked, while the outcome usually settles beyond question any lingering doubts. There have been twenty-eight cases recorded in this group during the past five years, all verified by operation or by necropsy; and it is significant that out of hundreds who sought advice for stomach trouble, few proved to have this most serious type of organic disease. The data on which diagnosis depends are not always the same, and this should not be expected. A cancer originating at the cardiac end of the stomach will very early give rise to dysphagia, with regurgitation of food soon after it is eaten, but may show free hydrochloric acid present, if stomach contents can be obtained; and no tumor may ever be palpable at any time. A cancer originating on the lesser curvature usually causes loss of appetite, bloating, heaviness and pain after eating, with loss of weight, strength and color; but may become very large before a tumor mass is palpable below the costal margin, or before free hydrochloric acid disappears from the stomach contents. A cancer originating at the pyloric end soon gives rise to obstruction, and in addition to other evidences of its presence causes nausea, frequent vomiting and ultimately dilation of stomach and food retention.

Several other points of importance in diagnosis stand out in a review of this group:

1. Two of the patients were under 40 years of age, one 37 and one 35. The third decade is no bar to the diagnosis of cancer, and other observers have reported it as occurring even in the second decade.

2. In twenty-three of the cases the duration of symptoms was set down as one year or less, in some only a few months, for short duration of symptoms with rapid progress is characteristic of gastric cancer. In one case, however, stomach trouble had existed persistently for twenty years, though the symptoms had grown much worse for only the previous six months. A second patient had a history of sour stomach, heartburn, belching and waterbrash at intervals for four years before the trouble became continuous and more severe, with loss of weight. A third had a similar history for fifteen years, and then one year of different and more severe trouble. A fourth had a history of recurring attacks of sour stomach for "years past," and could not tell that his recent symptoms were any different from those in former attacks. A fifth had a characteristic ulcer history for many years, and was finally operated on in 1912 for ulcer, and this was excised; on pathologic examination, however, the excised tissue showed beginning malignant degeneration in the ulcer edge. This patient remained well for two years, and then began to have symptoms and signs of cancer of the stomach from which he died six months later. All of these cases call to mind the possibility that cancer may develop on an ulcer base; and so the ordinary story of recent onset and rapid development of symptoms may be replaced by one of long-standing gastric disease.

3. In seventeen of the cases, stomach analysis showed complete absence of free hydrochloric acid, as expected. In five cases, no stomach contents could be obtained, because the tumor was at the cardiac end and the entrance to the stomach was blocked so that no tube could be passed. But in six cases the stomach contents showed free hydrochloric acid present in considerable amounts, varying from ten to twenty-eight degrees. The fact is certain that the presence of free hydrochloric acid is no bar to the diagnosis of cancer; and it is also equally certain, as will be shown later on, that the absence of free hydrochloric acid does not always mean cancer.

4. Tumor was found by palpation of the abdomen in twenty of the cases, but was not palpable in eight; yet in every one of the cases in which no tumor could be felt, its presence and location were distinctly shown on the roentgenographic plate. In dealing with chronic gastric disease, therefore, the only safe plan is to remember cancer first, and to make sure it is eliminated before considering any other diagnosis; and in any case at all suspicious, after history, physical examination and stomach analysis have gone as far as they can, roentgenographic plates must furnish their testimony before a verdict is finally rendered.

GROUP 2: GASTRIC AND DUODENAL ULCER

The propriety of including duodenal ulcer in this group can now scarcely be questioned. It has been proved that, in etiology and pathology, gastric and duodenal ulcers are identical. Their clinical history is so much alike that by this alone no man can tell them apart; and it is fortunate that the same treatment works well with each. It really matters little, therefore, whether the lesion is on one side or the other of the pyloric ring; and the safest plan in diagnosis is to include all chronic gastric and duodenal ulcers in one group, regardless of the exact situation.

During the past five years, ninety-two cases have been assigned to this group, of which fifty-five were considered to be gastric and thirty-seven duodenal. Twenty-three of these cases have come to operation, of which nine have proved to be gastric and fourteen duodenal. It is admitted without hesitation that several diagnosed gastric ulcers were found at operation to be duodenal; and one diagnosed duodenal proved to be really gastric. But it is a matter for congratulation that during these five years only one patient referred to the surgeon for chronic gastric ulcer was found to have no ulcer but a chronic appendicitis. It is significant that in this case, occurring early in the series, the patient was sent for operation without any roentgenographic plates having been made; and it taught a lesson that has never since been forgotten. One other case classified originally as chronic gastric ulcer in 1912 had to be transferred later to the group of gastric crises due to tabes, because by 1916 developments had occurred that made the later diagnosis certain. There may be other cases now reported in this ulcer group that are not correctly included; but all have been carefully sifted and every effort has been made to prevent error.

As to the methods employed in deciding what cases of chronic gastric disease belong in this group, they have been the usual and well recognized ones: clinical history, physical examination, gastric analysis, roentgenographic plates and fluoroscopic reports. The clinical history of these cases, if time enough is taken to elicit details, is characteristic and typical. The story that repeats itself over and over again in these records is of chronicity for years, in some cases for twenty, commonly for five or ten, rarely less than two or three; so that at once, by its long-standing symptoms, the case becomes suspicious. The history of periodicity is likewise noted in practically every case; of attacks for weeks or months during which the symptoms persist, followed by days, weeks or months of remission or complete intermission. The most constant complaint is of pain; and so essential is this that without it the diagnosis of ulcer is always a dubious one. The site of pain, however, and its time of occurrence are not always the same. One patient locates the pain in the epigastrium, another in the right or left hypochondrium, another altogether or mainly in the back, or running through from front to back. Similarly one patient says pain comes on three or four hours after eating, another says two hours, another only one. Almost universally the story is that pain is relieved by taking food and does not recur for an hour or more afterward. Other symptoms described sometimes as accompanying the pain, such as belching, waterbrash, heartburn and nausea, are not constant and in no way diagnostic; and when they are much dwelt on in the history and pain is not the chief complaint, the condition probably belongs to some other group than ulcer.

There seems to be an impression that gross hemorrhage is a frequent occurrence in ulcer, as manifested by vomited blood or by tarry stools or both. In these records, however, it was an unusual event. In only eleven cases out of the ninety-two could any history of hematemesis or melena be elicited. In ten of these, blood was vomited; in three there had been tarry stools as well as bloody vomitus; and only two had a history of black, tarry stools, without blood vomited. One of these patients died following a series of large hemorrhages throughout three days. The necropsy revealed at the lesser curvature a large ulcer, with deep excavation down to the pancreas and an open vessel of large size in the base. Another patient, after a week of repeated hemorrhages, in spite of medical treatment to prevent, had a drop in hemoglobin to 25 per cent. After that no further hemorrhage occurred, so that two weeks later he could be operated on, when a hard indurated ulcer on the lesser curvature was resected, and a gastro-enterostomy done. This patient recovered and has remained well since. Three other patients in this group with lesser amounts of hemorrhage have been subjected to surgery. One of these had a saddle ulcer on the lesser curvature; but in the other two the ulcer was distinctly beyond the pyloric ring, on the duodenal side, though all had a history of vomiting of blood on several occasions.

Examination of the abdomen does not afford much direct evidence in chronic gastric or duodenal ulcer. Tenderness and rigidity are noted frequently over the gastric area, sometimes localized to one sensitive spot; but this occurs with other gastric disease besides ulcer and, on the other hand, is not always found even when ulcer exists. The presence of a palpable mass due to cicatricial tissue is very rare, and when such a mass is found it is wiser to look on it as due to something else. The discovery of a tumor is rather against the diagnosis of ulcer, and the characteristic finding is the absence of all objective signs over the stomach; but valuable indirect evidence is found by palpation of gallbladder and appendix areas and the possible elimination of disease there as a cause of gastric symptoms.

As regards gastric analysis, the condition expected in ulcer is hyperacidity; but it is a mistake to assign too much importance to this element in the diagnosis. Gastric ulcer may be present even with a normal or subnormal acidity; for,—as Lockwood[1] states, hyperchlorhydria depends not merely on the presence of an ulcer but also on the location of the ulcer. In general, the nearer the ulcer to the pylorus, the higher the acidity; and with an ulcer on the lesser curvature, toward the cardia, the acidity may be normal or subnormal. The diagnosis must therefore never be rejected simply because no hyperchlorhydria is found; for no one factor is conclusive when taken by itself.

In the cases reviewed, the total acidity was over 100 in three; between 90 and 100 in eight; between 80 and 90 in sixteen; between 70 and 80 in nineteen, and between 60 and 70 in twenty-eight. If the range of normal total acidity is assumed to be from 40 to 60, as is the usual rule, there were thus seventy-four of these cases which showed a hyperacidity. But there were seven between 50 and 60 and six between 40 and 50, so that thirteen cases would be said to be of normal total acidity, while one was between 30 and 40, or subnormal. In the other four cases of the ninety-two, no gastric analysis was made; but the diagnosis in these was otherwise proved, by roentgenographic plates, by operation or by necropsy.

Occult blood in stomach contents is too common a finding after extraction of test meals to be of any value whatever as a sign of disease; and unless occult blood in feces is found after most careful preparation of the patient by days of meat-free diet, unless all other possible sources of bleeding from the gums to the anus have been eliminated, and unless it is persistently found, this sign has but little value in the diagnosis of gastric or duodenal ulcer.

In the evidence furnished by fluoroscopic examination and roentgenographic plates we have undoubtedly the greatest advance made in the diagnosis of gastric and duodenal ulcer during the past decade. Facts as to the size, position and shape of the stomach, its peristaltic activity, its emptying time, its contour and its possible defects are all of immense value in proving the significance of symptoms and secretory findings; while the contour and outlines of the duodenum, as shown by roentgenographic plates, many times demonstrate conclusively a condition that would otherwise remain obscure. So firm has become the conviction as to the value of the evidence obtained in this way, that without positive demonstration of the presence of defects in stomach or duodenum now known to be characteristic of ulcer, this diagnosis cannot be made with absolute certainty. The absence of all this evidence after investigation by an experienced observer should make one hesitate, no matter how suggestive the clinical history, the physical examination and the laboratory findings may be. But, on the other hand, a positive report of roentgenographic findings ought to have the support of symptoms and signs before it is interpreted to mean ulcer beyond the possibility of doubt; and one of the greatest pitfalls in the way of accurate diagnosis today is the readiness to accept the Roentgen report as final, and to slur the old and well tried methods of investigation, so long employed and so often leading to correct results before Roentgen rays were discovered.

GROUP 3: CHRONIC GASTRITIS

Patients rarely die from this disease, so the diagnosis cannot be confirmed by necropsy. Surgeons never operate intentionally for chronic gastritis, so it is not so frequently demonstrated as some other pathologic conditions of the living. Even roentgenographic plates give no sign of its presence. Yet these cases present certain fairly well defined characteristics which identify them and permit them to be segregated from other forms of chronic gastric disease. In the past five years this diagnosis has been made seventy-eight times; and while in the main the cases so classified have been sufficiently well marked to cause no hesitation, the group as a whole has shadowy borders and is not so distinctly outlined as those of gastric cancer and gastric ulcer. With the distinction between primary and secondary gastric disease still in mind, no case has been called chronic gastritis that occurred only as an incident in the course of chronic heart or kidney disease, pulmonary tuberculosis, cirrhosis of the liver or pernicious anemia; but those alone have been included where the gastric disease was the only one to be found.

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[1] Lockwood, G. R.: Diseases of the Stomach, Philadelphia, Lea & Febiger, 1913.

The symptoms of this affection are so varied that from them alone no conclusion can be drawn. Reviewing the histories of the cases in which this diagnosis has been made, the complaint most often found is of a sense of discomfort or distress coming on soon after taking food variously described as fullness, distention, bloating, or a sense of weight or pressure; sometimes this is spoken of as a dull ache, but never as severe pain. These feelings are caused by food soon after it is taken, not after an hour or two of comfort. Next in frequency complaint is made of belching and of frequent eructations of gas for a long time after meals; as this goes on repeatedly, relief is gradually obtained.

Compared with these two symptoms, of distress and gas after eating, all others are much less constant. Some patients complain of nausea. Some vomit more or less regularly after meals, bringing up the food just eaten, together with thick, slimy mucus. Some feel nauseated only when they rise in the morning, and retch and strain until they take food. Some regularly induce vomiting for relief. But vomiting has been found a much less frequent manifestation of chronic gastritis than most textbooks lead one to expect. In the seventy-eight cases in this group, it formed a part of the history in only fourteen. Appetite is not always poor; often it is reported as good, but patients fear to eat because food causes so much distress. Complete loss of appetite was a part of the complaint in only eighteen cases. Loss of weight is not the rule, and good nutrition may be maintained however much digestion seems to be impaired. In this series only twenty-five patients gave loss of weight as a symptom. Heartburn in a few cases is a great element in the discomfort, at times with sour food eructations, at times with only a hot, irritating fluid, when gas is belched. But, on the whole, "sour stomach" is an unusual feature of this form of gastric disease.

Reflex symptoms form a large part of the history, and may form so large a part as to distract attention from the stomach itself. Chief of these is headache, occurring either in the morning when the patient rises, after meals, with the other symptoms of indigestion, or only at intervals of days or weeks, with vomiting, lasting for one day and again disappearing. The pain may be only a sense of unusual fulness and heaviness, or it may be extremely severe and prostrating, as in the "sick headache" attacks with vomiting. Headache is often the presenting symptom in these cases, and of the gastric complaints little is said; but inquiry and investigation prove the existence of chronic gastritis as a basis, and treatment directed to this puts a stop to the headaches themselves. This has been the observation in twenty-one of the cases in this group. Other reflex symptoms occasionally noted are dizziness, depression of spirits, drowsiness habitually after meals, lack of energy, and general indisposition for exertion.

To explain what these symptoms mean, physical examination tells but little as regards the stomach; only tenderness is found with any frequency, and not always that. Roentgenographic plates and fluoroscopic examination are likewise negative. But the diagnosis rests on examination of stomach contents obtained after a test meal, which in chronic gastritis gives results that are positive, definite and diagnostic. The findings are so characteristic as to warrant their consideration in detail.

1. *Gross Appearance.*—The amount of material is small, only a few cubic centimeters, as a rule, though in other gastric conditions the amount obtained after the ordinary Ewald meal averages 100 c.c. In chronic gastritis the stomach contents come through the tube with difficulty, and often have to be stripped from it by force. The reason for the small amount and the difficulty in obtaining even this is the fact that the material is very thick and viscid and often semisolid. The bread eaten is poorly triturated, often in chunks, rarely in the pulpy, pultaceous state in which chyme should be. Not infrequently fragments of food particles are found that have been retained from some previous meal, such as bits of coagulated egg albumin, and shreds of meat fiber or fruit pulp. In seven cases of this series the contents were blood stained or contained blood in dark brown shreds, attributed to chronic congestion of the mucous membrane.

2. *Mucus.*—The diagnostic sign of chronic gastritis is the presence of mucus in stomach contents. It occurs in such abundance that its presence cannot be doubted, either free, in gelatinous masses, or intimately mixed with the bread in the test meal after removal, surrounding it and uniting it in a sticky, semisolid mass. The presence of this mucus is essential to diagnosis, and it was found in every case included in the group. Patients who vomit always mention this "slime" that comes up with their food. Those who vomit on rising, in the early morning, bring up this and nothing else but gas; and if the contents of the fasting stomach are extracted for examination, this is what is found in all chronic gastritis cases.

3. *Secretion.*—The most characteristic finding as regards gastric secretion is either complete anacidity or decided subacidity; and yet cases occur with normal acid values and a few apparently with hyperacidity.

(*a*) Anacidity: Among the cases in this group, thirty-eight were found to have complete absence of free hydrochloric acid by every test; of these, twenty-five gave a total acidity below 10, and thirteen a total acidity between 10 and 20, but with no evidence of free or combined hydrochloric acid in any.

(*b*) Subacidity: There were twenty-nine cases with a total acidity under 40 and free hydrochloric acid correspondingly decreased.

(*c*) Hyperacidity: Three cases presented a total acidity above 60, though in every other respect, in history, physical findings and gastric analysis corresponding to chronic gastritis.

(*d*) No analysis: It is a rule that in every gastric case there must be analysis of the stomach contents after a test meal; and any infraction of this rule calls for explanation. There were eight cases in this group in which no analysis was made; five of the patients were minors and their parents objected to the use of the stomach tube, while three other patients were vomiting so persistently that no test meal could be retained. Nevertheless, by vomited mucus, by absence of free hydrochloric acid in vomitus, by history, by negative physical examination and by roentgenographic findings, as well as by recovery on routine therapy, these cases were recognized without hesitation and assigned to the chronic gastritis group.

Certain diagnostic problems presented by these patients are not always easy of solution. In the first place, any person with a history of several months' persistent indigestion and more or less loss of weight, with entire absence of free hydrochloric acid in stomach contents, should always create a suspicion of gastric cancer, even though no tumor is palpable in the gastric area. But by the absence of pain from the history, by negative roentgenographic plates and fluoroscopic report, and by prompt improvement under therapy, we are usually able to decide without much delay that a neoplasm does not exist. A good rule in a dubious case is to give the patient one month for therapeutic test, which usually suffices for careful study and observation and often takes the patient out of the class of patients who require exploratory operation for diagnosis. But in these cases one should always think of cancer first, and until this has been eliminated never diagnose chronic gastritis.

In the second place, at least twenty-five of these cases, with a total acidity under 10 and no free or combined hydrochloric acid, might have been assigned to a separate group called "achylia gastrica." But there seemed no particular object in giving these cases a special name. They all corresponded in clinical history, gastric analysis, presence of abundant mucus and negative roentgenographic plates to chronic gastritis; and there appeared to be no reason for assigning them a place by themselves. Not all achylia gastrica cases may originate from chronic gastritis; but as yet we have no proof for any other pathology.

In the third place, cases with normal acidity and particularly those with hyperacidity create suspicion of ulcer. But the absence of pain, the prompt appearance of distress soon after food is taken, and the presence of abundant mucus even though acid values are high, with negative roentgenographic plates and fluoroscopic findings usually suffice to settle the question. However, cases of chronic gastritis with hyperacidity may be recent, of only a few months' duration; and it has been proved that fresh ulcer, not yet cicatrized or deeply penetrating, may give no evidence on roentgenographic plates. Hence it is not wise to decide too promptly that ulcer does not exist in these cases, and best always to suspect its existence in every persistent hyperchlorhydria, until repeated observations and subsequent developments eliminate the possibility.

Finally there remains the large group of dyspepsias with subacidity or anacidity, that are secondary to other abdominal disease, such as chronic cholelithiasis, chronic appendicitis or chronic intestinal stasis. This group, as well as the neurasthenic stomachs in which no organic disease whatever can be found, are a source of great confusion in diagnosis, and are at times set down wrongly as chronic gastritis until later developments cause them to be shifted to their proper place. Some of this sort there may be among the seventy-eight recorded, but not because no effort has been made to recognize and exclude them.

GROUP 4: GASTROPTOSIS

Prolapse of the stomach is a common occurrence; but there is no gastric history that identifies it, so it frequently goes unsuspected. Patients with this abnormality complain of stomach trouble; but when asked for details, their story may resemble that of cancer or ulcer or chronic gastritis or one of the gastric neuroses. It is only when special examination is made that gastric prolapse is found; but as this feature is peculiar and belongs to none of the other groups, it seems clear that cases with decided displacement of the stomach downward should be segregated, no matter what sort of stomach symptoms they present. During the past five years the histories and clinical data have been recorded in forty-seven cases of this sort. Many of these presented certain characteristics that repeated themselves over and over, so that gastroptosis really became one of the best defined and most easily recognized groups in the whole field of chronic gastric disease, even though the digestive symptoms gave no clue. The diagnostic data are as follows:

1. This is an ailment much more common in women than in men. Among the forty-seven patients, there were thirty-nine female and only eight male.

2. It is an ailment of small persons, fragile in build and light in weight. Of the forty-seven patients, ten weighed between 90 and 100 pounds at the time of examination; thirteen between 100 and 110, and five between 110 and 120. None weighed over 140. Of the male patients, some were of this light weight type, while others were tall, lean, slender and gaunt, and always had been so.

3. All complained of lack of vitality as well as of indigestion; all their lives they had been delicate in health, unable to do much without tiring, easily exhausted by effort, incapable of withstanding strain.

4. Many of them presented other complaints besides their chronic stomach disturbances and their lack of strength, particularly chronic constipation, pain in the back and right side, and inability to put on weight.

5. The trouble with digestion is usually of long standing but most variable character. Some present a picture of pain after taking food, and poor appetite, with loss of weight, of strength and of color that may cause suspicion of cancer. Some give a history of sour stomach, waterbrash, nausea, and pain appearing late after meals, with constant relief by soda or by more food, that closely mimics gastric ulcer. Some describe the characteristic sense of heaviness and weight coming soon after food, with belching, flatulence, headache and general lassitude during digestion that speak for chronic gastritis. Many cases, finally, present a mixture of symptoms that correspond to no type or group.

6. Physical examination reveals conclusively the low position of the stomach in the abdomen. In these small, poorly nourished persons its outline can often be plainly seen through the abdominal wall, lying with the greater curvature well below the navel. But to make certain that the stomach is prolapsed, inflation is the simplest method, by the well known procedure of giving the patient tartaric acid and sodium bicarbonate separately in solution and thus developing carbon dioxid. This distends and defines the stomach and makes its position plain; and consequently the greater curvature is found in these cases from 3 to 10 cm. below the navel, whereas normally the greater curvature lies about 3 cm. above. Physical examination also reveals in these patients a prolapsed right kidney, sometimes merely palpable, sometimes so far down that it can be caught and retained. All of the cases in this group showed this coincident nephroptosis, and in a

few the left kidney was palpable as well as the right. In many it is possible, when the bowels have not been made to move regularly, to outline the ascending, transverse and descending colon by retained fecal masses in them, and to determine that the transverse colon sags low in the abdomen often to the level of the pelvic brim. It thus becomes evident that gastroptosis is only one part of a general enteroptosis or visceroptosis which prevails to a greater or less degree in all this group of cases of chronic gastric disease.

7. Gastric analysis after a test meal gives a variable picture. Most cases show acid values that are normal or above normal. Of the forty-seven in this group, twenty-four gave a total acidity between 40 and 60; ten between 60 and 70, and three between 70 and 80, making thirty-seven in all of normal acidity or hyperacidity. The others all showed subacidity on gastric analysis, and two had no reaction at all for free hydrochloric acid with a total acidity of 4.

8. The most conclusive proof of the true condition present is furnished by roentgenographic plates, which demonstrate not only the existence but also the degree of ptosis more accurately than any other method. These plates also bring out the obstruction offered by gastroptosis to the exit of stomach contents through the pylorus, and show how often retention is a factor in causing the patient's distress.

Putting all these data together, it becomes easy to recognize this group of gastroptosis cases. They deserve a place by themselves, for they possess features not found in association in any other chronic gastric disease. Furthermore, as the object of all diagnosis is therapeusis, this group demands recognition; for without correction of the mechanical displacement of stomach, no other treatment offers any hope of relief for the gastric symptoms. Finally, in spite of any kind of treatment, these patients remain substandard and can never be kept even comfortable unless they learn to recognize their limitations and always to live within them; we can aid them but we cannot make their bodies over.

GROUP 5: GASTRIC NEUROSES

It is well understood at the outset what gastric neuroses are *not*. In the first place, chronic gastric disease that presents the characteristics of any of the foregoing groups should be classified in one of them and not among the neuroses. Improved methods of diagnosis have greatly increased our ability in recent years to detect these organic diseases of the stomach, and so to restrict the group of neuroses. In the second place, chronic gastric disease that does not present characteristics identifying it with one of the foregoing groups is often really due to chronic appendicitis or chronic cholecystitis, and must not be classed as a neurosis until these have been carefully eliminated. Cases placed at one time among the gastric neuroses may later, because of new developments calling attention to the appendix or gallbladder, have to be shifted to a different diagnostic group of real organic disease. In the third place, chronic gastric disease that can be traced to any definite pathologic change in any other organ, as the heart, arteries or kidneys, has no rightful place among the gastric neuroses.

Gastric neuroses can best be classed as stomach manifestations of neurasthenia. They are distinctly disturbances of function, without discoverable organic change in the stomach or any other organ to account for them. Formerly this group was considered a large one, but little by little it has been contracted until now there are even those who assert that it does not exist. There is no justification for this extreme view; but the more experience one has the fewer cases he assigns to the group of gastric neuroses, and the less satisfied he feels to leave them there. Reviewing the work of the past five years, fifty-two cases are still found classified as gastric neuroses; but this by no means represents the number originally placed there, for many were from time to time shifted from this to some other more definite diagnosis, as new developments or manifestations gave a clearer conception of the real condition.

Much confusion has arisen in the past from the effort to recognize and to name too many varieties in this group. Practically the two functions of most importance to the work of the stomach are motility and secretion; and most cases of disturbed function come under one or the other of these two heads. The only other disorder deserving consideration is that of abnormal sensibility, which at times seems to be the true explanation for the patient's complaints.

1. Disturbance of motility is commonly known as *atony* or myasthenia. Of this neurosis only fourteen cases have been diagnosed during the past five years. Its characteristic features are early satiety at table, ability to eat but little before feeling too full: persistent flatulence and belching, and reflex headaches when food too coarse or heavy is eaten. The diagnostic sign on physical examination is the succussion splash hours after food has been taken. After the test meal, amounts are obtained by the stomach tube far above the average, as high as 200 c.c. at times or even above; while the normal amount does not exceed 100 c.c. These contents usually present on analysis an acidity normal or above normal, but no excess of mucus or other evidence of organic disease. Though these stomachs are lazy and slow to empty, they do not retain, and the fasting stomach in the early morning is found without refuse. The greatest difficulty in diagnosis lies in separating these cases from gastroptosis; for neurasthenic symptoms are common to both conditions; and in the so-called atony cases, the weak walls permit the greater curvature to sag below normal limits after inflation by carbon dioxid or after the barium meal for roentgenographic examination. There really seems good reason, therefore, to suspect that the cases we class as atony are in fact minor grades of gastric prolapse, and that the neurasthenia is a consequence and not a cause.

2. *Hyperchlorhydria,* without any organic disease found to explain it, has been diagnosed twenty-five times; but whether these cases were really neurasthenic manifestations or were due to undiscovered organic disease is a matter for doubt. The group certainly grows smaller and smaller as one comes to realize how many conditions may reflexly give rise to hyperacidity and "sour stomach." Some of these that have been recognized from time to time, besides the well known organic diseases of stomach, appendix and gallbladder, are: intestinal parasites, particularly tapeworm; atypical cases of exophthalmic goiter; eye strain from errors in refraction; chronic pelvic disease in women and prostatic disease in men; hemorrhoids, and minute hernias through the linea alba. Of the twenty-five cases diagnosed hyperchlorhydria and grouped with the gastric neuroses, eighteen were so recorded during 1912 and 1913, but only four in 1914, only three in 1915, and none at all in 1916. I have become con-

vinced, in other words, that this form of "nervous dyspepsia" seldom occurs, and that a diagnosis of hyperchlorhydria as a neurasthenic manifestation has little justification.

3. There remains a group that seems more truly neurasthenic than either of the foregoing, to which thirteen cases were assigned: a group characterized by all sorts of complaints about digestion, but with no evidence of disturbed motility or secretion or of organic disease of any kind. These patients do not tell the same story twice because their symptoms are so variable. They are a source of great exasperation to the physician because their complaints are so innumerable, so unusual and so little in conformity with any type of chronic gastric disease; and no sooner are they relieved of one set than another set appears.

In general, it can be stated that the group of gastric neuroses is the most uncertain one of all. We are still forced to resort to it at times in diagnosis, but it should be accepted only after every resource has been exhausted, in the effort to find a better explanation for the case so labeled. The attempt to reach the truth in the investigation of all gastric cases is fraught with difficulties, and at times we all make mistakes. But in this matter I have frequently found consolation in a passage from one of Osler's essays:

> Start out with the conviction that absolute truth is hard to reach in matters relating to our fellow creatures, that slips in observation are inevitable even with the best trained faculties, that errors in judgment must occur in the practice of an art which consists largely in balancing probabilities; start, I say, with this attitude of mind, and mistakes will be acknowledged and regretted; but instead of a slow process of self-deception, with ever-increasing inability to recognize truth, you will draw from your errors the very lessons which may enable you to avoid their repetition.

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THE TEACHING OF PROTOZOOLOGY TO MEDICAL STUDENTS

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The importance of the protozoa as the causative factors in many grave diseases is thoroughly recognized today by every alert practitioner, particularly those whose labors carry them into tropical or semitropical zones. There is likewise a gradual awakening to the fact that many parasitic protozoa do not restrict their activities to those localities, but, on the contrary, are exceedingly ubiquitous. With the opening up of new trade routes and the broadening and development of commerce to the Far East, South America and Africa, and as a result of conditions which are developing with the progress of the European war, they are gradually establishing themselves in cooler climes. The malarial parasite has long been known too well in North America, and there is a growing realization that endamebic dysentery is not by any means a rare malady in the same territory. The medical schools of the United States will have to cope with this situation before long, and they can meet it only by extending their curriculums so as to meet the protozoological needs, not only of the men who will have to deal with conditions at home, but also of the rapidly increasing number of medical men who are answering the call to the tropics.

There has been no dearth of work on these organisms, and a vast accumulation of literature stands as a monument to the efforts of those who have reported their work and told of their methods of research into the protozoa. Singularly enough, however, little has been said or written on the exceedingly important matter of the teaching of protozoology to medical students. In the past it has been thought quite sufficient to give such instruction in the form, generally, of a brief course of descriptive lectures illustrated by charts or stained preparations. When specialists have given these courses they have often been so hampered by lack of time that it has been impossible to give an adequate presentation of the subject. When courses have been administered by some member of the faculty of a school, an instructor may have been selected whose own line of work was not sufficiently related to protozoology to enable him to do himself or his students justice. The tendency in many cases has been to lay most stress on the symptomatology, treatment and pathology of the diseases of protozoan origin, and while these things are of great importance, the result has been that the students have been given considerable instruction in medicine and little in protozoology. In a large proportion of cases they are more or less helpless as regards knowledge of the animals themselves, and hold a vague idea of the real appearance and mode of life of these important organisms. It is quite true that these students gain considerable useful information regarding the diagnosis and routine treatment of protozoal diseases, but this they should get anyway in the course of their work in clinical medicine, in which such instruction properly belongs.

It is not my purpose to criticize or belittle the work of the physicians who have done so much to advance our knowledge of protozoal diseases, or who have given so generously of their time and efforts to teach the subject from their standpoint. It is merely my aim to elucidate the fact that protozoology is one of the zoological branches, and should be taught by a zoologist who is a specialist in that group, and whose general familiarity with the field fits him to meet the problems of parasitology on a broad biologic basis where they belong.

I seek, also, to emphasize the fact that the relation of the protozoa to the medical sciences is not limited to the parasitic forms. Splendid material for experimentation in physiology, pharmacology and therapeutics, and pathology is afforded by species of protozoa which are easily obtained and readily handled. The problems of fertilization, growth and development present themselves in attractive form to the protozoologist, and their intimate relation to the medical sciences is self-evident.

The tendency on the part of medical men to place the parasitic protozoa entirely apart and separate from the other members of that great phylum has undoubtedly retarded progress in our knowledge of the life activities of the parasitic forms, and incidentally in the handling of problems in disease, to a serious extent. After all, the parasitic species are governed by the same general physiologic laws which regulate the activities of the free-living forms. It is true, there are many modifications and adaptations seen in the parasites which conform to the degenerative phenomena exhibited by parasitic animals in general; but, on the other hand, many parasitic protozoa show a complexity of structure and mode of living which places them on a plane with many of the more highly organized free-living species. Species of the genera *Balantidium*, *Nyctotherus* and *Ophryoscolex*, for example, are parasites whose morphology and habits closely resemble those of free-living forms—in fact, it might be said that they are protozoa which have simply chosen a life in the fluid contents of the digestive tract instead of a roadside ditch. One would hardly regard the trypanosome with its elaborate motile apparatus as an organism showing marked signs of degeneration as a result of a parasitic mode of life. In principle it differs little from many free-living forms of the group of flagellates. Again, the intestinal amebas differ very little from many species of free-living amebas barely enough to justify generic distinctions.

The protozoa may live in surroundings of great variety. Some may inhabit roadside ditches. Others are found in stagnant waters and those containing decaying organic matter, others live in moist earth or on mosses, a vast group are found in the sea, while still others have found favorable conditions for obtaining food from the body fluids and tissues of other animals or of plants. Some of those which live free nourish themselves after the manner of animals, while some exist as saprophytes. Precisely the same conditions obtain in the parasitic forms. The methods of reproduction in the parasitic species do not differ except in certain details from the methods seen in the living forms. In other words, the most striking point of difference between the parasitic protozoa and those which lead a free life is that they have adopted, as an environment in which to live, the body cavities or tissues of animals or plants, instead of the sea, a pond or a tuft of moss. The fact that these forms give rise in some cases to certain diseases is, to a large extent, only a side issue which plays a minor rôle in the study of the organisms themselves. That the parasites live in this manner no more stamps them apart from the other protozoa than obtains in the case of other species which live on mosses or in moist earth.

All of this leads us inevitably to the conclusion that in order to meet the problems, the investigator into the parasitic protozoa must have not only a broad knowledge of the entire group, but more than that, a sound biologic training which will guide him far afield from the bedside, in search of the solution of many medical and sanitary problems. To do effective work he must be familiar with the comparative morphology, physiology and cytology of the protozoa, and if he lacks that equipment he will be terribly handicapped from the very beginning of his work.

The protozoologist who has elected to specialize in work with the parasitic protozoa is none the less a zoologist. He is far more interested in the fortunes and fates of the parasites than he is in those who are infested with them. The patient interests him mainly from the standpoint of the influence his reactions exert on the parasite. Pathologic changes occurring in tissues interest him no more than the extent to which they influence the parasite. His work brings him to the borderline of medicine, hygiene and pathology, and if he is to teach the subject he must aim to reach the frontiers of these related branches; but he should cross no farther than is necessary to establish a firm footing for his students. To the work in the other departments the students must then apply the knowledge of the organisms he has given them. In doing this the protozoologist does no more violence to medical tradition and precedent than does the teacher of chemistry, physiology or bacteriology.

The zoologist has been one of the last to gain entrance to the medical school, but his admission has been the direct result of the progressiveness of the physician of today and not the fruit of any campaign conducted by the zoologists. The zoologist has found several problems awaiting him, and not all of these have to do with the actual teaching. A year's work at teaching protozoology to the average graduate medical student is apt to lead the teacher to the conclusion that, of all the professions, medicine is by far the most "practical." From the time he starts his work in a given school until the happy day when he succeeds in making it clear to his medical pupils that the sum total of importance in connection with the protozoa to the physician is not limited to staining reactions, the inoculation of animals, mixing of culture mediums and the efficacy of ipecac and emetin in endamebiasis, he will hear the never ending demand from many of his students for "practical courses."

Now, in my opinion, it is quite possible to make an exceedingly workable combination of the "practical" and the scientific in this work. That is to say, it is quite feasible to give to medical students instruction in protozoology which will fit them to deal with medical problems without going too deeply into the more abstract biologic problems. Much of the trouble in the past has been due, I believe, to the fact that while we have had many men who have achieved deserved success in the prosecution of researches into the pathogenic protozoa, we have had few who were willing to forego the fame which comes to the successful investigator and devote their energies and capabilities to training men for the work. It does not necessarily follow that a man who has become noted as a result of his publications is particularly fitted to teach the subject. In many instances the contrary is the case. Where research is the dominant idea in a man's mind, he cannot put his best into teaching when, if he does so, his problem must be neglected.

The protozoologist only makes a concession to common sense when he develops his required courses in the undergraduate school along lines which shall enable the student to recognize the important species, know something of their life cycles and general activities, and handle them at the bedside and in the clinical laboratory. He should discuss parasitology to the end that this class of students should understand the biologic basis of sanitary measures. But he should teach his students, above all things, the morphology, physiology and life cycles of the animals; and this he cannot do with stained preparations alone.

Many medical men I have met have frankly confessed never to have seen a living ameba or a trypanosome. Most of them have seen stained specimens at one time or another, but have found them of little aid in the identification of the living organism. In view of the wealth of comparative material which may be secured even in the neighborhood of the great cities in the United States, this is, to say the least, regrettable. Parasitic material, it is true, is not always available at the right time, but comparative material generally is. Let me illustrate this point with a few examples:

I am in the habit of leading my students up to the parasitic amebas by a fairly comprehensive preliminary study of the small fresh water amebas of the genus *Vahlkampfia*. In size and general appearance of the nucleus and cytoplasm, it resembles many of the parasitic species. The structural differences between *Vahlkampfia* and *Endameba* are not sufficiently great to lead the student too far astray if the teacher is careful. The material is abundant, and there is not lost, in searching through a smear of feces for a single lethargic individual, valuable time which might be spent more profitably in the study of active trophozoites, and dividing and encysting forms. It is relatively easy to secure amebas which may be studied on the slide and which will show not only division stages and encystation, but the development of flagellated stages as well. It is only in rare instances that these things are seen in clinical specimens. Many free-living flaggellates which may be cultivated in abundance illustrate the morphology of that group in a beautiful way, and among the infusoria may be found many of the *Heterotrichida* which will furnish the basis of study of the *Balantidium.* Exercises in physiology and microscopic technic may be beautifully worked out with these, after which the student may profitably turn his attention to an intensive investigation of the purely parasitic forms which he must study under more difficult conditions, but which he is enabled to attack with more definite knowledge of what he is to see. If living material from human beings is not available, it is almost always possible to secure comparative material representing the principal genera, and it should be employed not only to illustrate the form and activities of the living animals, but also to illustrate relationships between species parasitic in man, and those found in the lower animals and plants. Too little attention has been paid to these relationships in the past.

I have found that it is quite possible to give my undergraduate students entirely adequate instruction along these lines in a course of sixty-eight hours; but the syllabus is considerably amplified and extended in the graduate school.

In the graduate school the principal course should bear particularly on the parasitic species, but it should be sufficiently broad in scope to give the students a good survey of the entire field and ground them thoroughly in the fundaments of the entire science. There should, however, be other courses covering special cytologic training, and still others which should present other phases of protozoology which have a bearing on the practice of medicine.

In the required course the classroom work should be divided so that about one third of the time is devoted to didactic lectures bearing on morphology, physiology, taxonomy, cytology and parasitology. The remainder of the classroom work should be administered as seminars in which the students report on assigned literature. Each student should be required to defend his presentation of a topic against the criticisms of his fellow students, the instructor guiding the discussion and elucidating points which may not be clear. The laboratory work should run concurrently, the points brought out in the lectures and seminars being illustrated with fresh and stained material. Adequate time should be spent in training the students in the standard technical methods and study of the living as well as the fixed and stained organisms. The course as a whole should be a systematic review of the protozoa as a group. It should be taken up on the comparative basis and deal, therefore, with free-living species, and species parasitic in the lower animals and in plants as well as those infesting man. There should be a discussion of the evolution of disease from the standpoint of the development of the parasitic species. Such a course may be given in 102 hours.

An elective course may be offered consisting of lectures and demonstrations reviewing the field from the standpoint of general biology. This course should include a discussion of topics having a broad general relation to the medical sciences, such as the problems of senescence, fertilization, growth, regeneration and heredity as seen from the standpoint of the protozoologist. There should be an exposition of the application of experimental methods with the protozoa to physiology, pharmacology and pathology. Thirty-four hours may be so expended.

Another elective course should be offered for the benefit of those students who are about to engage in research on the protozoa. It should consist of a thorough treatment of the technical methods with the protozoa and the principles underlying these methods. It should not merely be a drill in staining and dissection, but should also include a study of the methods themselves with the idea of imparting to the student the basis on which the methods rest. Such a course presupposes previous work with the protozoa and should outline methods of attack on every type of problem from the study of the living organisms, through their fixation, staining and sectioning, methods with arthropods, breeding of pure and pedigreed lines for experimental work, administration of drugs and chemicals to the animals, up to a brief treatment of the statistical methods employed in the interpretation of results.

Finally, courses carrying graduate credit should be offered for students who desire to work up a problem in protozoology as a basis for a thesis or dissertation.

The field of dentistry has also opened to the protozoologist, and in Manila we have already taken advantage of it by giving a course in protozoology to students in the school of dentistry. The course devotes twenty-four hours to a brief general review of the protozoa as a group and an intensive study of spirochetes and protozoa found in the mouth. Training is given in methods of collecting and studying material, and the course promises to form a valuable accessory to the dental curriculum.

Much more might be said on the general topic of the teaching of protozoology to medical students, but this should serve as a fair outline of what may be accomplished. The main problem from the standpoint of the teacher, aside from the reluctance of a large group of graduate physicians to enter into work which has not a direct clinical bearing, is the poor preparation of a large proportion of the students. In the undergraduate school this is not a serious factor because the work there is very elementary and the students are fresh from their college work in zoology; but in the graduate school it presents a formidable and time-consuming problem. There, many students whose work in the purely clinical branches is unquestionably of a high order are wofully deficient in the most elementary knowledge of biology or even zoology. This condition entails the giving of considerable elementary instruction which should be unnecessary. But it is a problem which is exceedingly difficult to meet, for it would be unfair to bar from a postgraduate school students of ability in the clinical branches who were deficient in biology. It is a problem which for the present will have to be met by the zoologist the best way he can. Another difficult problem is presented by the student who, lacking previous training in protozoology, desires to undertake a research problem.

The disposal of individual cases may well be left with the instructor, but the proposition as a whole should be discouraged. Occasionally a case may arise in which a special line of work may be undertaken without previous study of the protozoa; but in most instances the student quickly discovers his weakness and applies to the instructor for aid. Such aid, of necessity, involves a course of special instruction which it is not practicable to give outside of the regular courses. With the protozoa it is scarcely possible for a student to obtain the best results from a study of one particular species or order without a knowledge of the group of protozoa as a whole.

In the foregoing I have tried to outline a scheme for instruction in protozoology to medical students. To one who is not particularly conversant with the subject, the program may sound exceedingly formidable and unnecessarily detailed; but from my experience in teaching not only Americans, but Filipinos as well, I have found it not too hard for any of them. Indeed, the scope of the work I have outlined is really no broader than the usual course in bacteriology, and it seems to me to be fully as important. After all, the protozoologist must be largely self-developed, and must build up on such a foundation as I have outlined. But a small proportion of students so trained take up protozoology as a specialty. That, in fact, is not the end sought. The endeavor rather is either to fit the men for more advanced medical and sanitary work, or to give such of them as fancy it the foundation on which they may, by their own efforts, become specialists in that group which to me is formed of the most fascinating members of the animal kingdom — the protozoa.

A CASE OF VOLKMANN'S ISCHEMIC CONTRACTURE

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This case serves to emphasize the danger of improper or indifferent application of plaster-of-Paris bandages, and the value of early treatment of the deformity following prolonged ischemia.

REPORT OF CASE

W. H., boy, aged 8 years, fell, Aug. 14, 1915, and injured his left forearm. A physician found a fracture of the forearm, and applied a plaster-of-Paris dressing extending from the elbow to the fingers and completely including them. According to the mother's story, the only protection to the limb under the plaster was a single layer of ordinary gauze. No cotton or other similar material was placed between the fingers, which were entirely hidden from observation. The plaster was left on three weeks. During this time the boy did not complain of any pain, but he could not move his fingers, which were evidently cramped together. At the end of three weeks the physician for some unexplained reason found it necessary to give the patient an anesthetic to remove the plaster, which was apparently extremely thick.

On removal of the plaster it was found that the boy had no power in his hand. The skin about the wrist was discolored and bruised, and the hand was swollen. Nothing was thought of this condition until the lapse of one week when, the swelling having diminished, it was observed that the hand and fingers were contracted and the boy had very little power. Becoming alarmed, the mother brought the boy to my clinic at the Lebanon Hospital Dispensary.

The hand was still moderately swollen, and the skin of the hand and fingers glossy. The wrist and fingers were flexed. When the wrist was passively extended the fingers became markedly flexed, and attempts to extend them were painful and unsuccessful. When the wrist was flexed, the fingers could be straightened out. We were dealing, therefore, with what was evidently the typical deformity of Volkmann's ischemic contracture. At the middle of the forearm there was a circumferential thickening due to the callus formed at the site of fracture.

The treatment for Volkmann's contracture advised by Mr. Robert Jones was promptly instituted. Individual splints were applied to the palmar surfaces of the fingers, and by means of adhesive tapes the fingers were gradually stretched into complete extension. The splints were kept on continuously, except for a brief period each day when they were removed for massage of the fingers, hand and forearm. At the end of one week the fingers could readily be fully extended without pain when the wrist was only moderately flexed. The finger splints were then removed and an aluminum splint was applied to the flexor surface of the forearm, extending from near the elbow to slightly beyond the finger tips. The splint differed from that recommended by Mr. Jones, who uses a single sheet of aluminum from elbow to fingers in addition to the individual finger splints. The distal part of the splint I used was divided by longitudinal indentations, thus providing a separate extension for each finger. I believe this is an advantage, as we have one instead of several splints to deal with, and in addition the extensions for the fingers are part of one and the same splint. At first the splint was bent down at the wrist to such an angle as to allow easy and complete extension of the fingers. Two straps of webbing held the brace to the forearm, and strips of adhesive plaster were used to keep the fingers extended. About every other day the splint was straightened a little and finally bent backward into hyperextension, watch being kept that the fingers were always extended. Twice daily the brace was removed and the hand and forearm massaged and manipulated.

Within one month the patient's hand had been extended to 150 degrees, and active flexion and extension of the hand and fingers were rapidly returning. Two months later, in February, 1916, the boy had such excellent use of his hand, the swelling and glossiness having entirely disappeared, that the apparatus was discarded. The hand was examined again, April 14, 1916, when it was found that there was a complete anatomic and functional cure.

COMMENT

This case demonstrates the importance and necessity of adequate protection under any plaster dressing. When plaster is applied to a limb which is deformed or diseased but not likely to swell, we may apply with safety a plaster dressing over only a slight amount of protection, as a flannel bandage. In the case of an injury, as a fracture, however, in which the trauma to blood vessels causes extravasation of blood and consequent swelling, it is essential to surround the affected limb with some such material as sheet cotton, which is compressible and will allow for swelling without danger of undue compression. It is further advisable to leave the fingers exposed or at least accessible to observation. We must instruct the patient that the color of the fingers must at all times be normal, and the patient should at all times be able to move them. The ability to move the fingers freely is, of course, positive proof that the plaster is not applied too tightly. Swelling, extreme pallor or cyanosis of the fingers or inability to move them are danger signals which demand immediate attention. Should such an untoward condition arise, we must promptly remove the splint and apply another more cautiously.

It should be remembered that for purposes of fixation a thin plaster is just as effective as a thick one.

The very favorable result in this case must, of course, be attributed to the institution of the Jones method of treatment soon after the deformity appeared. During the past year, at Dr. Royal Whitman's clinic at the New York Hospital for Ruptured and Crippled, I have seen several similarly favorable results. These were all in patients who applied for treatment early. The key to the successful management of ischemic contractions lies in early and persistent stretching and active and passive motions. When the deformity is of long standing, there are trophic changes in the skin, hardening of the musculature of the forearm from fibrous tissue replacement of the muscle tissue, and atrophy of the nerves, all of which militate against success by any known method of treatment. In these old cases we can expect only improvement.

CONCLUSIONS

1. In applying a plaster bandage to an injured limb, the limb must be sufficiently protected by sheet cotton, flannel or similar material.

2. The fingers should be exposed to observation, and the patient must at all times be able to move them.

3. Unusually severe pain, extreme pallor, cyanosis or swelling of the fingers call for prompt removal of the plaster.

4. Should a contracture develop, it must immediately be treated.

5. The method advised by Mr. Robert Jones is the most effective one.

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A CASE CONFIRMATORY OF THE SPINAL FLUID COMPRESSION SYNDROME

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Ayer and Viets[1] recently reported the rarity of recognition of spinal fluid changes characteristic of cord compression. Their search of the literature, however, brought to light a number of articles, especially in French and German, dealing with the subject and recognizing certain changes as the "spinal fluid compression syndrome."

The abnormal findings were chiefly three: A yellow color or xanthochromia, spontaneous coagulation, and an increase in the cell count. They tabulate twelve cases which have been under their observation, showing findings, treatment and result, and they review the literature quite extensively. Their conclusions are:

> 1. We believe that changes in the spinal fluid frequently occur as a result of compression of the spinal cord.
>
> 2. The principal characteristic of such compression fluid is marked increase of proteins without corresponding cellular increase, obtained under normal pressure.
>
> 3. Xanthochromia with massive coagulation, added to the above, makes a more intense reaction of the same significance, only more conclusive.
>
> 4. Factors which tend to give the syndrome most readily, or to give it in its most intense form, are processes which act readily, are intramedullary or cause pressure on the cord from all sides, and which affect the lower cord.
>
> 5. We do not believe that such findings are necessary in cord compression, but that their presence is confirmatory evidence of value in some cases.

The following case, which also presented interesting diagnostic problems, is another case confirmatory of these changes in the spinal fluid often characteristic of cord compression, and therefore it seems worthy of special report:

Nov. 20, 1916, J. G., a Pole, aged 23, a drill-press operator, walked into Harper Hospital without noticeable abnormality or impairment of gait, and was admitted as a ward patient. He complained of pain in the abdomen and back, of ten days' duration, which largely disappeared after catheterization had relieved the enormously distended bladder. The family and personal history were negative, save that he asserted that he had suffered twice before from retention of urine, some years before.

The day following admission, there was complete motor paralysis of the left leg, and twenty-four hours later, complete paralysis (flaccid) of the right lower extremity.

The man was well developed; the breath was foul, the tongue coated, the throat injected. He reported that he had lost 20 pounds the last two months. Rigidity of the neck was well marked. There were no abnormalities of extremities or trunk, thorax or abdomen. The patient presented a well marked horizontal nystagmus, most noticeable when he attempted to look down or to the left. His wife, to whom he had been married one year, said that she had long noted this nystagmus. It seemed difficult to correlate it with his present ailment.

November 21, the right knee jerk was exaggerated, and the left still present but of diminished activity. The abdominal reflexes were present, but response was slight, and the cremasterics present. There were no apparent sensory changes, some cervical rigidity, and no Kernig sign.

November 22, the deep reflexes were abolished and there was a complete (flaccid) paralysis of both lower extremities. Sensation was much diminished in both lower extremities, though the cremasterics were still faintly present. These changes went progressively on to the total abolition of all reflexes and an ascending sensory impairment, analgesia being for several days stationary, up to the level of the twelfth dorsal vertebra.

November 21, the spinal fluid was clear, but clotted rapidly. November 23, the spinal fluid flowed very slowly and clotted instantly, while, November 27, there was spontaneous coagulation, well marked xanthochromia, and no pleocytosis. These changes led to the diagnosis of a compression myelitis and the advice of surgical interference.

December 2, laminectomy was done with free escape of (extradural) pus at the level of the seventh dorsal vertebra, revealing an osteomyelitis of the seventh dorsal vertebra as the source of trouble. The patient died, December 10, and necropsy was refused. The case, however, well illustrates the presence of the Nonne-Froin syndrome in cases of compression myelitis.

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[1] Ayer, J. B., and Viets, H. R.: Spinal Fluid Findings Characteristic of Cord Compression, The Journal A. M. A., Dec. 9, 1916, p. 1707.

English Utilization of Waste Materials.—Consul A. E. Ingram at Bradford (*Commerce Reports*, April 13, 1917) describes the saving and utilization of waste material in England as recommended by the Local Government Board. The value of bones and fat waste for the production of glycerin for munition purposes is emphasized. It is said the Quartermaster General's Department has in operation a plan for utilizing camp refuse, and some figures are given on the saving on glycerin effected by using wastes. While English-made glycerin was $282 per ton, American glycerin cost $1,182. During the first month, a weekly return to the army of $8,760 for camp refuse was made. In January, 1917, the weekly return had increased to $46,232, representing approximately $2,433,250 annually for waste rations. The production of glycerin from these waste products amounted to more than 1,000 tons, effecting a saving of $875,970.

Clinical Notes, Suggestions, and New Instruments

PERNICIOUS MALARIA: A REPORT OF A CASE

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This case of pernicious malaria presented several interesting features, particularly the blood picture and the reaction to treatment. Occasionally one obtains a picture of pernicious anemia in these cases, and the absence of parasites in the peripheral circulation throws the diagnosis in doubt unless a complete and careful study of the blood is made during the disease.

Treatment with quinin, properly given, promptly relieves the condition, and the improvement which takes place in the blood picture is surprising.

History.—G. W., man, aged 33, white, farmer, was admitted to St. Luke's Hospital, Jacksonville, Fla., Jan. 16, 1917, in a comatose condition. The abdomen was distended and tympanitic. Physical examination at this time was negative. The family and personal history were unimportant. The patient had been taken ill in October, and had had occasional headaches since. There was edema around the eyes and affecting the hands and feet with no pain; it was first noticed, November 18. There was no history of chills. The patient admitted taking much quinin during the past few years. There were marked pyorrhea and marked pallor of the mucous membranes. The lower margin of the spleen was at the costal border; there was slight tenderness to pressure over this area.

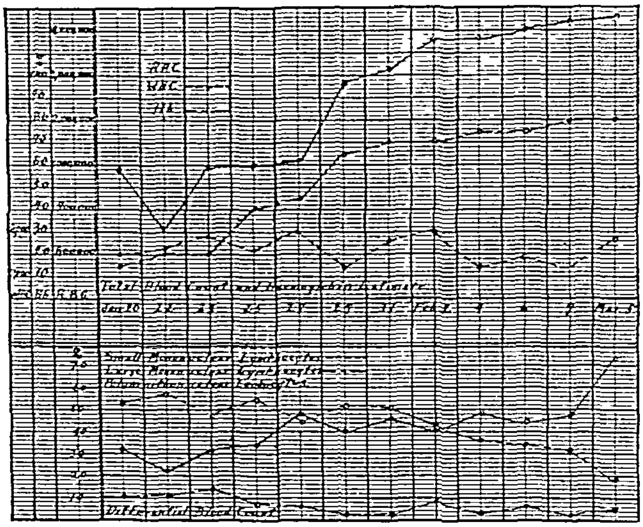
Laboratory Examinations.—The first slide from this patient was received at the laboratory, January 17, the day after his admission to the hospital. At that time his temperature was subnormal, and there was nothing particularly pathologic in the picture of the blood, and the parasites on examination were absent. We did not receive another slide, January 18, at which time his temperature went up above normal. January 19, we received a slide which gave a picture of pernicious anemia with a high small mononuclear lymphocyte count and a low polymorphonuclear leukocyte count. There were five nucleated red cells of the normoblastic type and one of the megaloblastic type. Poikilocytosis, polycromatophilia and basic stippling were also present.

January 20, another differential count was made with the same results except that the nucleated red cells were absent and no parasites were found. The red blood cells were 992,000 per cubic millimeter, the white cells 7,500 per cubic millimeter and hemoglobin 15 per cent. January 21, a differential count was made and no parasites found, and it was believed at that time that we were dealing with a case of pernicious anemia rather than pernicious malaria, although the white cell count was too high for a case of primary anemia.

January 22, after a slight rise in his temperature, we found numerous ring bodies and a few megaloblasts. The differential count remained practically the same. On this day the red cells were 865,000 per cubic millimeter, with hemoglobin estimate of 20 per cent. and white cell count of 7,600 per cubic millimeter.

With the diagnosis of malaria established, the man was put on quinin, and from then on his blood picture rapidly became more normal. The accompanying chart shows the improvement in the counts as they were taken every other day. The twenty-second day of the disease, the blood count was: red cells, 3,944,000; while cells, 7,400, and hemoglobin estimate, 15 per cent.

The patient has been kept under observation since with no recurrence. The blood counts, both total and differential, are normal.



Total blood counts, hemoglobin estimation and differential blood counts.

A CASE OF PARAPHARYNGEAL ABSCESS

Harry S. Reynolds, M.D., New Haven, Conn.

In view of the scarcity of literature on the subject of parapharyngeal abscess, this case seems worth reporting:

Aug. 2, 1916, Dr. T. H. Russell of New Haven invited me to see H. S., a girl, aged 4 years, who had been treated over a period of several weeks by a number of physicians successively. An attack of measles had terminated three weeks previously. As far as we were able to ascertain, a remittent type of fever had begun immediately afterward and had continued since; the patient looked decidedly septic. Both ears had been freely discharging for nine days; the discharge was more profuse from the right ear. One week previously her mother had noticed that she "talked through her nose," as she described it. She had had an irritative unproductive cough for four days. At the time of our visit, 8:30 p. m., her temperature (oral) was 101 F.; the respirations were slow, and the pulse very rapid. Both ears were freely discharging thick offensive pus. There was marked torticollis to the right, the head being moved only with difficulty. There was a large swelling under the right mandible, just below the angle and anterior to the sternocleidomastoid muscle. Both faucial tonsils were rather large, but not reddened, and the right tonsil was displaced markedly inward toward the median line, the posterior pillar being pushed forward. At the right side of the pharynx, immediately behind the posterior pillar of the right tonsil, was a conspicuous swelling—somewhat soft, but not fluctuating. There was no noticeable swelling, edema or redness of the remainder of the pharynx or of the palate, uvula or faucial pillars. The entire posterior portion of the pharynx presented a fairly normal appearance. The heart and lungs were negative.

On the following day, the patient experienced difficulty in swallowing.

August 4, the temperature was 101.2 F. The difficulty in swallowing still persisted, and the left ear had stopped discharging. Mouth breathing was noticeable. The bulging mass in the pharynx just behind the posterior pillar was soft and fluctuating, and had attained the size of a hickory nut. Dr. Russell opened it by inserting a small artery clamp and spreading the points, obtaining a large amount of greenish-yellow pus. Coincident with the internal removal of pus the external swelling decreased markedly in size and the patient seemed considerably relieved.

August 6, the temperature was 99.4 F., the pulse 135, and the patient was very pale and seemed quite weak. There was some cough, although the lungs were negative. The sinus at the right of the pharynx was freely discharging pus; there was still some discharge from the right ear, and the swelling in the neck had almost entirely disappeared.

On the following day, the temperature was 99.2 F. and the patient seemed much improved. The appetite was much better, there was less pallor, the swelling in the neck was negligible, and the discharge from the left ear was thinner and less malodorous.

the symptoms, and in which an operation for fastening the kidney into its normal position will cause permanent disappearance of all associated abdominal disturbances. Therefore, the least that can be said is that occasionally such a plastic operation is necessary and is curative.

(To be continued)

Special Article

THE MEDICAL OFFICER OF THE ARMY

V

MILITARY PROPERTY—MILITARY LAW

The issue and care of military property and supplies is a subject that requires considerable attention from the new medical officer, though the accounting for this property is simple, and can be readily understood.

The supply table in the "Manual for the Medical Department" contains a complete list of all supplies that are considered necessary in the military service; but in time of peace any special instrument, apparatus or pharmaceutic preparation that is considered necessary is promptly supplied on requisition. That part of the supply table which refers to the field supplies is not so flexible. It must be understood that when an army is in campaign all supplies have to be standardized so that the supply depots can have on hand a sufficient reserve to meet all emergencies. If special articles not in this table are called for, the time required to fill such a requisition will naturally be much longer, and if dependence is placed on special orders of this kind, the sick and wounded are bound to suffer. Furthermore, these supplies are arranged in such a manner that space in packing is economized as far as possible. This is important, for the transportation facilities of an army are always kept down to the smallest amount.

REQUISITIONS

In the field, requisition for medical supplies is made whenever these supplies are needed. No specific date for forwarding these requisitions is given. All requisitions of this type are made on a special requisition blank, which is simply a sheet arranged for the convenience of the officer requiring the supplies. It of course includes a heading, and following that is the list of supplies needed, typewritten in alphabetical order as they appear on the field supply table. When new units are organized, the medical department equipment is also furnished on the same type of requisition. This requisition is forwarded to the division surgeon or the department surgeon, and on his approval the stores are issued.

In time of peace, annual requisitions are made for the supplies that will be needed during the coming year. The amount of these supplies is laid down in the supply table and depends on the strength of the garrison. Naturally, though, special articles are needed at times, and furthermore, on account of different contingencies, the annual allowance is found at times insufficient. To remedy this a special requisition can be made when necessary, though it is recommended always that these requisitions be put in not oftener than once a quarter.

THE CHECKING OF PROPERTY

When medical supplies are shipped to an organization, an invoice is sent to the officer who has made a requisition for them. On receipt of the supplies he checks them over carefully according to the invoice and signs the two copies of the receipt which accompany the invoice. One of these copies is sent to the issuing officer, and the other to the surgeon general at Washington, D. C. The checking of this property when received is facilitated by a packer's list which is sent with it and gives the numbers and contents of the separate packages.

A careful record of property received and expended is kept in the office of the organization. This is called a property return. The return is merely a simple method of bookkeeping with the debits and credits plainly shown, so that at any time it can be determined just exactly what quantity of any article is on hand.

Medical department property is divided into two classes — expendable and nonexpendable. In the supply table the nonexpendable articles are shown in italics, and these articles cannot be destroyed or otherwise expended without authority. The expendable articles can be used in the treatment of the sick and wounded, and can be dropped from the return by the accountable officer without further procedure.

When the officer in charge of any amount of medical department property has been relieved by another officer, his property return is closed; that is, the quantity on hand is balanced by article and the relieving officer receipts to him for what remains on hand by signing the receipt inclosed with the return. All officers are cautioned carefully to check up property shipped to them or turned over to them by their predecessors, as they will be responsible for any discrepancies not noted.

All officers who have property invoiced to them, and who keep a property return, are considered *accountable* for this property; that is, the returns required are always completed under their supervision. On the other hand, if property is issued to them as in charge of any part of a hospital or other sanitary unit for which they give a memorandum receipt, they are *responsible* for the property and are required to care for it adequately, but they do not make a "property return" for it.

If property has become unserviceable for any cause, or is lost in the service, a survey report is made of this property, giving the articles to be considered, accompanied by the necessary affidavits of enlisted men and the certificates of officers that every care has been taken to preserve the articles mentioned. This is then considered by an officer detailed by the commanding officer as a survey officer, who determines from his investigation whether due care was taken in the premises, and besides, whether or not the officer responsible should be cleared of responsibility or should be required to pay the cost of the property.

In addition to this method of disposing of unserviceable property, it can be placed before an inspector whenever he visits the command for inspection purposes. He would then inspect the property and decide what disposition should be made of it, and his decision is usually final. If the property is ordered destroyed by either of these methods, the report of the inspecting officer, with his decision in the separate instances, is forwarded as a voucher with the return.

when made; to show the disposition of the articles destroyed or otherwise disposed of.

MILITARY LAW

Military law is provided for the government of armies in peace and war. There are two divisions of military law: One is called international law and treats particularly of the action of armies and individuals of those armies in time of war, or at any time when they come in contact with foreign nations. That part of international law which is of interest to our armies in time of war is laid down in a small book published by the War Department called "The Rules of Land Warfare," and can be obtained by application to the adjutant general, Washington, D. C. These rules are of decided interest to the medical officer, for his actions when captured by the enemy, or in other contingencies, are laid down carefully and must be obeyed to the letter.

The other division of military law is for the internal government of the army and is covered by the "Articles of War," which form the common law for the army. Offenses are classified and punishments provided in the same way that the civil law is written.

COURTS MARTIAL

To punish violations of military law, courts martial are provided. These are of three classes: the summary court, the special court and the general court.

The summary court is the lowest military court and consists of one officer appointed by the commanding officer of the organization. This court has jurisdiction over minor offenses committed by enlisted men, though a noncommissioned officer and several classes of enlisted men, especially excepted by the president, cannot be tried by such a court without their consent. This court is also limited in its power of punishment and cannot sentence a man to a longer confinement than three months, or a forfeiture of more than three months' pay.

The special court consists of from three to five officers appointed by the commanding officer of the organization. This court can try any person subject to military law except officers or classes especially excepted by the president. This court has jurisdiction over offenses of considerable more gravity than those covered by the authority of the summary court, but it cannot sentence a man to dishonorable discharge, to confinement for a longer period than six months, or forfeiture of more than six months' pay.

The general court is the highest military court, and consists of from five to thirteen officers. If the latter number is available, it must be so constituted. The general court is convened by commanding officers of the larger units of the army, as the division, or separate brigade, or by commanding officers of territorial departments. This court has jurisdiction over offenses committed by any person subject to military law, and the limits of punishment are as shown in the "Articles of War" covering the offenses. The death punishment cannot be imposed except when specifically authorized by law.

To make the action of a court martial final, the proceedings must be approved by the officer who convenes the court, or, if he has been relieved, by his successor. Sentences for the dismissal of an officer tried within the limits of the United States must be approved by the president.

The general court martial sits in full uniform, with side arms, around a table provided for the purpose, the president of the court taking his seat at the head of the table; the other officers on either side according to rank. The judge advocate of the court, who is in reality the prosecuting attorney, takes his seat at the foot of the table. He swears all witnesses and conducts the proceedings of the court. Each person to be tried is allowed counsel, who may be an officer detailed for the purpose, or, if he so elects, a civilian lawyer. The trial is conducted according to the regular rules of evidence, and all points of evidence are carefully considered before a finding is made.

OTHER COURTS AND BOARDS

In addition to these courts as outlined in the foregoing, we have a court of inquiry provided for in law, which is convened at the request of any officer or soldier who considers that he has been wrongly treated. It consists of three or more officers, carefully considers the evidence in the case, and renders an opinion when ordered to do so.

Retiring boards are also formed to examine officers who desire retirement from the service, or who have been ordered to appear before them for examination in view of their retirement. These boards consist of five members, of whom two are medical officers. They see that the officer is carefully examined, and consider the evidence presented to them by the War Department or by the officer concerned, and decide from this examination and evidence as to whether, in their opinion, the officer should be placed on the retired list of the army. Their findings must receive the approval of the War Department before the action is considered final.

All officers serving on courts martial, boards of inquiry or retiring boards, are sworn before they enter into their specific duties, so that they are under oath to well and truly try the cases brought before them.

The punishment for infractions of the military law are laid down in the "Manual of Courts Martial," and in a great many cases convictions for special crimes or misdemeanors call for a certain punishment, which is mandatory.

The "Articles of War" in offenses such as a sentry sleeping on post, desertion, violation of safe conduct, etc., give two grades of punishment — one for peace time, which is outlined from time to time by proclamation of the president, and another for war time, which, for the offenses mentioned, is always death. In time of peace, certain military offenses are treated distinctly from the reformatory standpoint, and the man is given a chance to mend his ways and become a good soldier. This reformatory work is conducted at the military prison at Fort Leavenworth and its branches at Governors Island, New York, and Alcatraz Island, San Francisco. Each prisoner is carefully examined by an alienist when he is sent to these institutions, and his treatment is to a certain extent along lines suggested by this examination. If he is considered capable of reform, and his efforts in that line are satisfactory, he is placed in a disciplinary battalion for further training, and if he shows a proper degree of improvement he may be returned to the army to serve again as a soldier.

Communicability of Cancer.—A study of life insurance statistics, recently completed by Arthur Hunter, president of the *Actuarial Society of America*, indicates that the cancer rate among those in attendance on sufferers from cancer is only normal, and that the same is true among those whose parents or grandparents died with cancer.

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DIET AND THE BACTERIAL FLORA OF THE INTESTINE

It is becoming an accepted dictum that the most important factor in determining the character of the bacterial flora of the intestine is diet. Ingestion of foreign bacteria, even in large numbers, does not of itself seem to displace the common intestinal types in normal individuals. This fact needs to be kept in mind in any attempt to implant a special strain of bacteria for therapeutic purposes in the digestive tract. Interest has been concentrated from time to time on several groups of micro-organisms which may appear in special relations to the alimentary processes. They include the so-called "putrefactive" bacteria, of which the *Bacillus coli* and *B. welchii* are familiar illustrations; the aciduric micro-organisms represented by *B. acidophilus, B. bifidus,* and also the widely heralded *B. bulgaricus;* and latterly the amylolytic or starch-decomposing bacteria, of which the *Glycobacter peptolyticus* of Metchnikoff is an example. Each group represents organisms which somewhat specifically exhibit a pronounced disintegrative effect on individual types of food compounds—proteins, sugars and starches, in the order referred to above.

Long ago Herter and Kendall[1] found that in animals an abrupt change in diet from a dominantly protein (meat and eggs) to a milk and sugar diet is followed by an alteration of physiologic conditions in three distinct directions: in the nature of the intestinal flora, in the putrefactive products of the feces and urine, and in the clinical conditions. The chief characteristic of the bacterial change is the gradual but rapid substitution of an acidophilic nonproteolyzing type of flora for a strongly proteolyzing type. The chief feature of the putrefactive conditions in the intestine is the reduction of the indol, skatol, phenol and bound hydrogen sulphid and a diminution in the indican and aromatic oxyacids of the urine. Clinically the most striking feature of the change in diet is (in monkeys) an improvement in spirits and activity which may safely be construed as showing a markedly improved sense of bodily and psychic well being. The diminished intestinal putrefaction may in part be ascribed to a reduced protein intake when meat and eggs are omitted from the dietary, but this alone was not believed to account for the pronounced physiologic changes, particularly the alteration in the flora. After noting the extensive bacterial degeneration which follows the change from one diet to another, Herter and Kendall ventured to assert that possibly in conditions of disease of the intestinal tract in which undesirable bacteria abound both on a protein diet and on a diet rich in carbohydrates, frequent alternations in the chemical nature of the diet are beneficial by interfering with the establishment of any one type of bacteria in the intestine.

Meanwhile the work of Rettger and his pupils,[2] among others, has afforded a substantiation of these views. They have shown that the *B. acidophilus* of Moro and the *B. bifidus* of Tissier, two well known members of the aciduric or lactic acid bacillus group of bacteria, are common inhabitants of the intestinal tract even of man. At times their numbers may be so small that they almost escape detection, whereas at other times they may become established to the exclusion of other forms. The typical flora of infants which subsist on mother's milk is cited as an illustration of the extent to which one intestinal organism (*B. bifidus*) may dominate and even supplant all other types.

Hull and Rettger of Yale University have shown that milk undoubtedly owes its beneficial action to the lactose which constitutes nearly half of its solid matter. When lactose is taken in liberal amounts by human adults, along with the daily food, the flora characteristic of healthy persons on a mixed diet begins to change until *B. acidophilus* appears in conspicuous or even dominant numbers. *B. bifidus* is always less prominent. Without the ingestion of lactose, no such changes are observed. Following the use of laxatives, these organisms are present in much larger numbers. This is ascribed by Hull and Rettger to the transfer of lactose along the alimentary canal so that before absorption a sufficient amount reaches the lower parts of the intestine, where the aciduric bacteria are known to multiply most abundantly under the right conditions of nutriment and environment. Obviously unless the sugar can be transported to the place where the most marked bacterial changes, putrefactive and otherwise, occur, little opportunity is afforded for the development of the aciduric type of micro-organism. It seems likely that lactose disappears somewhat slowly from the intestine. Bread, on the other hand, containing cooked starch is quickly digested so that available sugar does not remain long enough in the intestine to exert the favorable effect on the bacteria. Milk and lactose together are said to form the most practical and effective diet to bring about the predominance of the aciduric bacteria in man. Meat and other protein-rich foods increase the incidence of indol-producing forms.

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[1] An Observation on the Fate of B. Bulgaricus (in Bacillac) in the Digestive Tract of a Monkey, Jour. Biol. Chem., 1908, **5**, 293; The Influence of Dietary Alternations on the Types of Intestinal Flora, ibid., 1910, **7**, 203.

[2] Rettger, L. F., and Horton, G. D.: A Comparative Study of the Intestinal Flora of White Rats Kept on Experimental and Ordinary Mixed Diet, Centralbl. f. Bakteriol., Part I, orig. **73**, 362. Hull, T. G., and Rettger, L. F.: The Influence of Milk and Carbohydrate Feeding on the Intestinal Flora of White Rats, ibid., **75**, 219. Rettger, L. F.: The Influence of Milk Feeding on Mortality and Growth and on the Character of the Intestinal Flora, Jour. Exper. Med., 1915, **21**, 365. Hull, T. G., and Rettger, L. F.: The Influence of Milk and Carbohydrate Feeding on the Character of the Intestinal Flora, Jour. Bacteriol., 1917, **2**, 47.

These experiences are in accord with the reported effects of the use of lactose and milk in the dietary of typhoid fever.[3] Here, too, milk alone has not been found as efficient as a diet with additions of carbohydrate, particularly lactose, in reducing the putrefying types of bacteria and encouraging the acidophilic forms. Finally it should be noted that the Yale investigators, like numerous other observers, have been unable to establish *B. bulgaricus* in the intestine by the feeding of large numbers of these organisms. The ingestion of milk may bring about a change in the aciduric type of intestinal flora; the dominating organism, however, is not the bacillus of Massol but the *B. acidophilus* of Moro.

THE EFFECT OF SODIUM CARBONATE IN DIABETES

The mechanism for the oxidation of sugar in the body is extremely sensitive to the concentration of hydrogen ions. What would once have been regarded as seemingly insignificant alterations in the reaction of tissue fluids have been demonstrated to modify detectably the consumption of sugar by the isolated beating heart or the surviving intestine.[4] Such physiologic indicators are far more significant than a strip of litmus paper, because they respond promptly and vigorously to minute alterations in their physiologic environment. The greatest difficulty in drawing conclusions from observations on surviving organs in this way lies in the multitude of possible factors which may contribute to the deviations of performance made by a delicately responsive mechanism. That is, there are many physiologic and pathologic variables which may modify cellular functions.

The possible biologic significance of what seem like mere traces of acid or alkali — slight alterations in the reaction of the environment of the tissue cells — may perhaps be appreciated more easily in the light of a recent calculation by Lusk.[5] The least amount of energy which is necessary to maintain the life processes of 1 kg. of body substance is 1 calory an hour, which represents the quantity of energy contained in 215 mg. of glucose. In ordinary life, two thirds of the energy which supports our bodies is derived from glucose. It has been estimated that 1 kg. of body tissue contains cells having a total surface area of 150 square meters. Therefore, when each square meter of this cell surface is supplied with a sugar solution containing 1.5 mg. of glucose an hour, the life of the tissue can be maintained. One can thus imagine, says Lusk, how thin a film of glucose solution around the cell is necessary for the maintenance of its life. Here slight alterations of reaction may well be conceived to exert profound effects.

This concerns also the relations of acids and alkalies to diabetes, recently discussed in THE JOURNAL.[6] Murlin and Sweet[7] have suggested that the internal function of the pancreas may be closely akin to its external function in that, on the one hand (external), it provides for the complete neutralization of the acid contents of the stomach, thereby protecting the liver in its glycogenic function, and on the other (internal), it somehow preserves the proper concentration of hydrogen ions in the tissues for combustion of glucose. It is not impossible that the pancreatic hormone, through which the latter function is discharged, may prove to be a peculiarly adapted alkali produced by the islands of Langerhans. A differentiation of cells for the production of alkali in the pancreas is *a priori* no more improbable than such a differentiation for the production of acid in the stomach. The alkali which passes into the intestine neutralizes the hydrochloric acid of the stomach, but it may also be given off to the blood. Acidity of the tissues may be due to the accumulation of carbon dioxid. A peculiarly adapted alkali which should maintain the combining power of the blood (corpuscles as well as plasma) for carbon dioxid would serve to maintain the normal reaction in the tissues. Not only would the apparently remedial effect of gastrectomy on experimental pancreatic diabetes thus be explained, but also the possible benefit of alkali therapy in human diabetes appears in a new light. In this connection Underhill[8] has reported the apparently beneficial effect of large doses of alkali in severe glycosuria in man; and more recently Murlin and Craver[9] have begun a series of observations on the influence of sodium carbonate, administered by duodenal tube, in human diabetes.

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[3] Barker, L. F.: The Diet in Typhoid Fever, THE JOURNAL A. M. A., Sept. 12, 1914, p. 929. Torrey, J. C.: The Fecal Flora of Typhoid Fever and Its Reaction to Various Diets, Jour. Infect. Dis., 1915, **16**, 72.

[4] Compare Rona, P., and Wilenko, G. G.: Biochem. Ztschr., 1914, **59**, 173. Rona, P., and Neukirch, P.: Arch. f. d. ges. Physiol., 1912, **148**, 273.

[5] Lusk, Graham: Intermediary Metabolism in Diabetes, Am. Jour. Med. Sc., 1917, **153**, 40.

[6] Acids and Alkalies in Relation to Diabetes, editorial, May 12, 1917, p. 1411.

[7] Murlin, J. R., and Sweet, J. E.: Pancreatic Diabetes in the Dog, IV, The Influence of Pylorus Exclusion and of Gastrectomy upon the Effects of Pancreatectomy, Jour. Biol. Chem., 1916, **28**, 261.

[8] Underhill, F. P.: Proc. Soc. Exper. Biol. and Med., 1916, **13**, 111.

[9] Murlin, J. R., and Craver, L. F.: Preliminary Observations on the Influence of Sodium Carbonate, Administered by Duodenal Tube, upon Human Diabetes, Jour. Biol. Chem., 1916, **28**, 289.

It must be pointed out at the outset that the hydrogen ion contents of the blood, and still more of the tissues, cannot be altered easily; but as slight changes seem to produce marked effects, on isolated organs at least, the more careful attempts to influence tissue reaction seem worth while. The reasons for the duodenal mode of administering alkali were twofold: It was expected thereby to find little danger of vomiting and no interference with digestion, and it was believed that in the duodenum the alkali would not stimulate the stomach to produce more acid. The outcome in the few cases already studied is highly suggestive. The observations of the favorable effects of alkali on depancreatized dogs were confirmed. The output of sugar was often materially reduced. There was distinct clinical improvement in several of the patients. Murlin and Craver are convinced that there may be a bona fide reduction in the percentage of blood sugar by the alkali independently of any factor of dilution. If this is true, they add, there is little reason to doubt that, in man as in the dog, the alkali may facilitate the actual oxidation of glucose. Only direct observations on the respiratory metabolism can settle this question.

SPIROCHETES AND RAT-BITE FEVER

Since our previous reviews of the cause of rat-bite fever,[1] new facts, experimental and clinical, have turned more light on the questions still at issue. Futaki, Takaki, Taniguchi and Osumi have fortified their contention of the protozoan etiology of the disease by a study of five more cases, in each of which they found a spirochete,[2] two patients exhibiting the spirochete in the circulating blood derived from a vein or the punctured skin. In the early stages of rat-bite fever the spirochetes are found in the local eruption of the skin and in the enlarged lymph nodes, whence they seem gradually to invade the blood. In relapsing fever the organisms are numerous during the febrile, but decrease greatly in number or disappear altogether during the afebrile period. When animals are inoculated with blood from a patient suffering from rat-bite fever during the afebrile period or when there is light fever, the spirochetes are present. It is always difficult to find them, however, as they are few in number.

The Japanese investigators believe that the spirochete identified by them belongs to the protozoa and not to the bacteria. Spirochetes, of course, occur in rats; but as those under consideration in the human disease appear to be without identification as known species, the new designation of *Spirochaeta morsus-muris* is now proposed for the etiologic organism, which is regarded as belonging to the *Spironemacea* (Gross) of the nature of *Treponema*.

This raises definitely the debated question as to whether or not rat-bite fever is caused by a streptothrix, as maintained by several, including American observers[3] of the disease, or by the newly described spirochete. Perhaps it ought rather to be said that rat-bite fever with the clinical symptoms of inflammation of the bitten part, paroxysms of fever of the relapsing type, swelling of the lymph glands, and eruption of the skin, all occurring after an incubation period usually of from ten to twenty-two days or longer, does not necessarily include all diseases related to the bites of rats. Indeed, the Japanese workers regard Blake's carefully studied case as one of streptothrix sepsis caused by the bite of a rat.

There are so few spirochetes in the swollen local lesions of the skin and the enlarged lymph glands that it is said to be unusually difficult to detect them in material taken from patients. For this reason inoculations, preferably into mice, are advised. The organism can then be found in the blood of the inoculated animal after a lapse of from five to fourteen days, or at the latest four weeks. In harmony with the spirochetal theory is the striking clinical effect of salvarsan on rat-bite fever.[4] The micro-organism is also decidedly arsenotropic in the experimental therapy of inoculated animals.

The spirochete described is not present in the blood of all rats, and there is no relation between the species of the rat and the ratio of infection. The organism has never been found in healthy mice or guinea-pigs; but the latter animals develop the disease after they are bitten by rats infected with the spirochete. It can be detected in about 3 per cent. of house rats in Japan. From the fact that patients suffering from rat-bite fever have invariably been bitten by rats and that the newly named spirochetes are found both in house rats and in human patients with rat-bite fever, the Japanese investigators logically infer that the spirochete is transmitted from the rat to the human body. As the organisms have never been detected in the saliva, but only in the blood of rats, the source of the infectious organism is believed to be in blood which, owing to hemorrhage from the gums, enters the saliva of the rat.

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[1] The Cause of Rat-Bite Fever, editorial, The Journal A. M. A., Oct. 9, 1915, p. 1285; Further Observations on the Cause of Rat-Bite Fever, March 18, 1916, p. 894.

[2] The Cause of Rat-Bite Fever, Jour. Exper. Med., 1916, **23**, 249; Spirochaeta Morsus Muris, N. Sp., the Cause of Rat-Bite Fever, Second Paper, ibid., 1917, **25**, 33.

[3] For example, F. G. Blake (Jour. Exper. Med., *1916*, **23**, 39), Wilder Tileston (The Journal A. M. A., April 1, 1916, p. 995), and Ruth Tunnicliff (The Journal A. M. A., May 20, 1916, p. 1606).

[4] Hata, S.: Munchen. med. Wchnschr., *1912*, **59**, *854*.

The Price of Knowledge.—Thoughtless people often grumble at the two or three guineas paid for a few words of advice. They do not reflect how long it has taken the physician to acquire the knowledge that enables him to give profitable counsel, or that the advice, if faithfully followed, may mean prolongation of life and increased efficiency in work, to say nothing of greater happiness for the patient himself and his family. The public has still to be educated to a right appreciation of the intellectual value of things and to deliverance from the superstition of a crude commercialism as the ruling principle of life.—*Brit. Med. Jour.*, Jan. 27, 1917.

Current Comment

* * *

THE SELECTIVE DRAFT HAS PASSED. FIVE HUNDRED THOUSAND SOLDIERS WILL SOON BE IN TRAINING. FOR THESE MEN 3,500 PHYSICIANS ARE NECESSARY. WILL YOU BE ONE? IF YOU HAVE NOT ALREADY APPLIED FOR MEMBERSHIP IN THE MEDICAL RESERVE CORPS, DO IT NOW. WE WILL SEND YOU AN APPLICATION BLANK.

* * *

WAR AND PROHIBITION

The prohibition movement appears to be growing steadily stronger and stronger. At present about 85 per cent. of the territory of the United States is dry, and about 58 per cent. of the population. In view of the increasing strength of the sentiment in favor of prohibition, it is not at all surprising that a powerful effort should be made to secure some form of nation-wide prohibition at least during the war. Besides the usual reasons urged in favor of prohibition, special emphasis is now directed to the necessity of stopping the manufacture of alcoholic beverages in order to conserve the food supply and to turn additional labor into channels concerning the usefulness and necessity of which there can be no question. But of all reasons that may be urged against the use of alcoholic drinks, the two that must appeal to physicians with irresistible force are (1) the action of alcohol in lessening all forms of efficiency, physical, intellectual and moral, and (2) the intimate connection always found between drinking, prostitution and the spread of venereal diseases. The evidence against alcohol on these accounts is so overwhelming, so well established, and so generally known, that it does not seem necessary at this time to go into details, quote figures or cite examples. Only the other day an experiment was mentioned in The Journal (p. 1414) which showed that 50 gm. of brandy causes a depreciation in the marksmanship of expert shots of 30 per cent. in rapid firing and 50 per cent. in slow firing. What sense is there in training men to become efficient and then sit idly by and let the hard-won efficiency be taken away by alcohol? We know that wars heretofore have resulted in tremendous increase in venereal diseases, not only in the military but also in the civil population. Students of history tell us that such increase may be sufficient to place the stamp of physical deterioration on entire nations. To ask another question — what sense is there in laboriously selecting and training the flower of our young manhood to make soldiers, sailors, marines, and then do nothing decisive to save them from the far-reaching disasters to themselves and others of venereal disease? The fate of the movement to secure nation-wide war prohibition through legislative action and in other ways is uncertain. As the first duty of the medical profession is to prevent disease and loss of human efficiency, we must do all in our power to favor such movements. In the meanwhile no time should be lost in putting into effect the excellent recommendations of the General Medical Board to the Council of National Defense that every military command be surrounded by a protected zone in which prohibition and the sale of alcoholic drinks shall be prohibited, and that special efforts be directed toward furnishing the men with suitable opportunities for wholesome recreation.

MEDICAL OFFICERS' TRAINING

The medical officer in the army is not only a physician but also a soldier — at least he is a soldier in that he is an integral part of a machine, all parts of which must run smoothly and in unison. While he has certain specific duties, separate and distinct from those of the officer of the line or of the soldier in the ranks, yet the medical officer is a part of the army. Whether in the field, on the march or in camp, he has his position and must fit into it or there will be friction. Probably not one in fifty of those who have volunteered, or who will volunteer, know how to ride a horse, much less to manage it in maneuvers.[1] Then again, emergencies have arisen when it has been necessary for the medical officer to become an active combatant. In a word, there are some elementary, but most important, things for the army medical man to know, and to know thoroughly, or not only will he be in trouble but those under him may suffer. For instance, he must know the routine of getting supplies, the position of the sanitary personnel on the field in time of war, the disposition of the property of the wounded, and the method of reporting various activities. Undoubtedly, therefore, the first order that most commissioned medical reserve officers will receive will be to report to one of the training camps. Here they will spend from two to four months and then they may be transferred to the mobilization camps. Necessarily, there will be some exceptions in this matter of training, as in the case of those connected with base hospital units, and of others who have gone to France and England.

DRAFT OF PHYSICIANS IN ENGLAND

On another page is an account of the recent developments in Great Britain as a result of the shortage of physicians. This is nothing less than the application of the selective draft to the medical profession. The decision of the government to draft medical men of military age was hastened, according to the *Lancet*, by the attacks made by submarines on hospital ships. It had been realized for some time, however, that demands for more medical officers could be met only with difficulty under the voluntary system. "Under that system," says the *Lancet*, "the country has received, and is receiving, the devoted assistance of thousands of medical men who have neither given heed to their financial present or their professional future, nor to the personal dangers of the medical soldier, as revealed in the ever-growing lists of our dead and wounded colleagues." It is the conditions that are so forcibly emphasized by this recent action of the War Office of Great Britain in resorting to the draft that has prompted the earnest appeal to the United States for physicians, which is being responded to so nobly.

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[1] All medical officers are mounted. Lieutenants and captains are supplied with horses by the government; majors furnish their own horses (The Journal A. M. A., May 12, 1917, p. 1416).

INTENSIVE METHODS IN INFANT WELFARE WORK

Believing that the prevention of tuberculosis among young children would yield a return for the effort and money expended, and that such preventive work would be most efficient if carried out by a responsible unit in a restricted area, the Tuberculosis League of Pittsburgh arranged for an experiment covering eight blocks in a poor section of the city. The blocks were thickly settled by a mixed foreign population. The work of city agencies and charitable organizations was closely correlated and concentrated especially on infant welfare. Prophylactic clinics were held and careful treatment given slight ailments, such as noses and ears affected with discharges, and other conditions commonly neglected in such districts. Great pains were taken to teach the mothers and older daughters how to feed infants properly. At the same time a house to house survey was made and the nationality, housing conditions, sanitation and family income compared with the physical condition of each family. The response on the part of the mothers, foreign as well as American, was quite satisfactory; they were eager to learn the better ways of caring for infants, and were quick to realize the benefit to the whole family resulting from sound health of the baby. The work was continued for one year, and during that time the death rate in the area was 43 per thousand lower than for the whole ward—a strong indication of the great effectiveness of intensive work in infant welfare. It is unfortunate that the experiment, which was intended to cover fifteen years, was soon abandoned, largely, it is said, because of opposition to the methods as too paternalistic. In view of the undoubted effectiveness in preventing death and disease of such methods, they should receive much wider application.

THE WASTEFUL NOSTRUM

In his younger days, H. G. Wells, the novelist, was a "chemist's assistant" — drug clerk. The first-hand knowledge he there obtained of the nostrum evil was turned to splendid account in his classic "Tono-Bungay," the life-history of a "patent medicine." In the closing chapter, where Mr. Wells moralizes on the lessons taught by the incidents related in the book, he questions the wisdom of the title he has given it. "I have called it *Tono-Bungay,* but I had far better have called it *Waste.*" And any one at all familiar with the nostrum evil must agree with him. Waste, futile and yet monstrous; waste of money, waste of efficiency, waste of health, yes, waste of life itself are the indictments that stand fairly and squarely against the great majority of "patent medicines." In times such as those through which we are now passing it seems preposterous that an intelligent people should tolerate so tremendous a drain on its resources. It has been conservatively estimated that each year the United States spends $150,000,000 for nostrums. This, however, is but a fraction of the total loss from this cause. The waste of time, due to ineffective treatment, the resultant charges for medical attendance that would otherwise have been unnecessary, to say nothing of the amount spent for medical advice by those who, having nothing the matter with them, have been frightened by lurid advertisements into believing they were sick — all go to swell the huge financial burden imposed by the nostrum. If every worthless or fraudulent "patent medicine" were eliminated from the American market today, the public would be the beneficiary to the extent of better health and millions of dollars. The only ones who would suffer would be nostrum exploiters — and physicians. For, contrary to the popular belief, a belief assiduously instilled into the public mind by the "patent medicine" fraternity, the nostrum is the physicians' greatest business-getter. As we have often said, out of every ten men who are led to believe, by the scare-heads of some "kidney cure" advertisement, that a passing soreness in the lumbar regions means kidney disease, seven or eight of them will go to their physicians for the two or three who go to the drug counter. Thousands of sick, who, if properly treated at the outset would have been speedily returned to the ranks of the healthy, are brought, by reliance on the nostrum, to the place where long and expensive medical treatment becomes imperative. Whether or not we have reached the place where meatless and breadless days may be an economic necessity, there is no better time than the present for the American people to usher in a nostrumless year. The gain that would follow in health, efficiency and finances would be one more of the great surprises that the present world conflict has produced.

THE RESPONSIBILITY OF THE COUNTY SOCIETY IN PREPAREDNESS

Every county medical society should appreciate its opportunity and realize its responsibility in the mobilization of the medical profession for war. Besides securing volunteers from its membership, there are two things which, if they are to be done, the county society must do. The first is to adopt measures by which, in their absence, the interests of those who volunteer shall be protected, so far as this is humanly possible. The sacrifice a physician makes in leaving his practice for a protracted period of time is unique. The bookkeeper, the clerk, the artisan, the clergyman, the merchant can be guaranteed his position on his return. The merchant, the banker, the farmer, the lawyer can arrange with another, or with his partner, to look after his business during his absence. But the physician's practice — his "business" — is different; there is a personal relationship between a physician and his patient that makes the transference of the patient from one practitioner to another almost, but not quite, impossible. In the great majority of instances, where there is an honest, earnest, fraternal effort on the part of the physicians of a community to do the right thing, they will succeed. This applies to keeping the enlisted physician's place in his community open for his return to civil practice. Already many societies have taken action in this connection.[1] We cannot emphasize too strongly the propriety of this, especially in communities in which this personal relationship of the family physician is recognized. The second is to consider the people's interests. In some communities which have but one physician it would be a public calamity to have that physician leave for the war. Yet the physician may consider his duty to his country greater than his duty to his community. This honorable ambition should not be discouraged, but the county society should consider how the needs of the people can be provided for, either by a locum tenens — who should be what the word actually means, a substitute for the time the doctor is absent — or by arranging with neighboring physicians to render the service. It is not probable that many county societies will have such problems on hand, but some undoubtedly will. In any event, The Journal urges every society which has not already done so to call a meeting to discuss the problems immediately before our profession. It should require but little effort at this time to get every member to such a meeting. The presidents and secretaries of county societies as well as the committees on medical preparedness have unusual responsibilities in this matter. Now is the time for action.

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[1] Medical Mobilization and the War, The Journal A. M. A., April 14, 1917, p. 1131; April 21, 1917, p. 1190; April 28, 1917, p. 1270; May 5, 1917, p. 1331.

MEDICAL STUDENTS AND THE DRAFT

The report of the Conference Committee of the Senate and House, on the bill authorizing the president to increase the military staff of the United States by selective draft, makes certain exemptions. These do not include the medical student; they do include theological students. Why theological students should be exempt we do not know; possibly it is on the supposition that they are "conscientious objectors." We can hardly believe it possible that Congress will pass this law without recognizing the importance of sustaining the continued production of medical men. France and England have suffered from neglecting or overlooking this point. The great cry in France and in England is for more medical men, and the need probably is just as great with the Central Powers, if the facts were known. The first demand on us after we became one of the allies was for medical men. If Congress accepts the conference report as it stands, the first "regulation" made by the War Department should exempt medical students.

THE MEDICAL OFFICER A SOLDIER

Judging from a few letters which have been received, there are some who are considering making application for the Medical Reserve Corps, but who hesitate and ask for information because they do not know what their destination will be after they receive a commission, or whether they will have any choice in the matter. A few evidently fear that they may be sent to France, to the front; others, on the contrary, seem to fear that they may not be sent abroad, and may not get into real active service at the front. When a physician accepts a commission in the Medical Reserve Corps of the Army he, by that act, accepts a commission in the army itself and becomes a soldier. As a soldier, he obeys orders and goes where he is sent. If he likes it he smiles and goes; if he does not like it he smiles and obeys without grumbling—if he is a true soldier. This comment is simply a statement of fact which every member of our profession must bear in mind at the present time.

Medical Mobilization and the War

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THE SELECTIVE DRAFT HAS PASSED. FIVE HUNDRED THOUSAND SOLDIERS WILL SOON BE IN TRAINING. FOR THESE MEN 3,500 PHYSICIANS ARE NECESSARY. WILL YOU BE ONE? IF YOU HAVE NOT ALREADY APPLIED FOR MEMBERSHIP IN THE MEDICAL RESERVE CORPS, DO IT NOW. WE WILL SEND YOU AN APPLICATION BLANK.

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MEDICAL MILITARY INFORMATION FOR PHYSICIANS

Any of the following mentioned pamphlets or circulars will be sent by The Journal on receipt of a stamped self-addressed envelope:

1. What the Civilian Doctor Called to Active Service with the Army Should Know, by Major W. J. Lyster; a reprint of three articles which appeared in The Journal, giving the duties of the physician in the zone of the interior, on the line of communication, and in the zone of the advance.

2. The Medical Corps of the Army as a Career, by Major R. E. Noble; reprinted from The Journal, March 31, 1917.

3. Rules for the Examination of Recruits; consisting of G. O. No. 66 and Circular No. 2, giving the regular technic of examination of recruits for the United States Army.

4. Examining Boards for Applicants for the Medical Reserve Corps; a list of boards officially constituted to pass on applicants for the Medical Reserve Corps.

5. Instructions to Officers of the Medical Reserve Corps; a list of sixteen points to receive the first attention of the reserve officers when called to active duty.

6. Information Regarding Application for Appointment in the Medical Reserve Corps.

7. Application Blanks for Appointment to the Medical Corps and to the Medical Reserve Corps.

Organization of Hospital Units

To supplement and assist established military hospitals, the American Red Cross has organized a number of "Hospital Units." Such units, or detachments from them, may also be assigned to duty on hospital trains, hospital ships, or on any other military sanitary organization that the exigencies of the service may require. Hospital units may possibly be used to perform hospital service in connection with training, mobilization and concentration camps. As a general rule the organization of a hospital unit is approved in connection with a civil hospital which does not have a staff large enough to permit of the organization of a base hospital.

An Army Hospital Unit is made up of one director, one adjutant, two chiefs of service, four staff surgeons, four staff physicians, one head nurse, twenty nurses, three clerks, who may be women, and such number of orderlies as may be necessary, not to exceed fifty without special authorization. All of the officers in an Army Hospital Unit will be commissioned in the Medical Reserve Corps of the Army. Orderlies will be enlisted in the medical department of the army. All nurses must be enrolled as Red Cross nurses.

A Naval Hospital Unit consists of one director and seven medical officers, without nurses, orderlies or equipment.

Whenever it is desired to form a Hospital Unit a letter should be addressed to the Director-General of Military Relief, the American Red Cross, Washington, D. C., requesting authority to form such a unit and nominating a prospective director.

tion to aid in the celebration in honor of these historical political events.

Illinois Accepts Responsibility.—At the annual meeting of the Illinois State Medical Society, in Bloomington, May 9, resolutions were adopted calling on every member to accept his full share of the war burden; recommending that all members that are between 22 and 35 years of age, report immediately for examination for war service, and that all between 35 and 55, enrol in the Medical Reserve Corps; that it be considered the patriotic duty of physicians who remain at home, to take over the private practice of those in the military service, pay a just share of fees to the families of the absent physician and after the war return the practice, inviolate. The society also recommends the total abolition of alcoholic drinks in military camps.

Baltimore Doctors Off for the Front.—Dr. J. A. Campbell Colston and Dr. William G. Jack, members of the surgical staff of the James Buchanan Brady Institute at the Johns Hopkins Hospital, have left for France. Nothing but the receipt of their commissions, their equipment and their orders regarding the time of departure and the details of their duties, stand in in the way of the departure of the rest of the "first 15," among whom are the following: Drs. David M. Davis, Baltimore, Brady Institute, Johns Hopkins Hospital; Earle G. Breeding, Washington, D. C., University of Maryland; Dr. Francis F. Callahan, Seaview Hospital, New York; William F. Jenkins, Seaview Hospital, New York; John E. Evans, University of Maryland; Dr. William H. Toulson, Baltimore, University of Maryland; Samuel O. Pruitt, Bayview Hospital; William F. Williams, Bayview Hospital; George L. Stickney, University Hospital, and Maurice C. Pincoffs, Baltimore.

Military Status of Base Hospitals.—A Kansas physician writes:

1. "Please inform me of the military status of the Red Cross base hospitals which have been organized in this country. 2. Do the members of the staff receive regular commissions in the Army Medical Corps? What is their remuneration?"

1. In time of war the service and equipment of the American National Red Cross is subject to orders by the War Department and becomes a part of the sanitary service of the land forces. This, of course, includes the base hospitals. When a base hospital is taken over by the War Department, the personnel thereby becomes subject to military laws and regulations.

2. Before a member of these units would be qualified for transference to the medical department, he necessarily would have to be commissioned in the Medical Reserve Corps, and would receive pay according to his rank.

Medical Schools Cooperate with the Navy.—The Jefferson Medical College, Philadelphia, and the Medical Department of Harvard University and the Boston City Hospital, Boston, have tendered to the surgeon-general of the navy the facilities at their disposal, for the special training of physicians who are about to enter the Medical Corps of the Navy. Their offers have been accepted, and plans are being made to conduct at the institutions named special courses of instruction for physicians who have passed their examinations for admission to the regular medical service of the navy. The courses thus laid out will permit the simultaneous training of a larger number of prospective naval surgeons than can be accommodated at one time at the Naval Medical School at Washington. Should the exigencies of the service permit, however, all officers will be given the advantages of a course at the Naval Medical School before being assigned to active duty.

Maryland Doctors Ready to Serve.—Already 175 Maryland doctors have received or are awaiting commission in the Medical Officers Reserve Corps, U. S. Army, including the fifteen who have been selected for immediate service in distributing hospitals in France. Of this number seventy-one have undergone mental and physical examinations for the army service. The examinations have been given at the Johns Hopkins Hospital by a board composed of Drs. John Staige Davis, Cary B. Gamble, Jr., Arthur M. Shipley and Lloyd B. Whitham. Ten more Maryland doctors will leave for the front about the first of June, and probably ten more will go in July, under the War Department's plan to send 200 physicians a month to France.——Letters are being sent out to all physicians in Baltimore and the state by Drs. Hugh H. Young and Gordon Wilson, chairman and secretary, respectively, of the Committee on Medical Preparedness, asking them to state whether they are ready to go to the front, and to those who have decided to remain, whether they will take over the practices of the physicians going to the front until their return.

Psychiatric Base Hospital for Maryland.—The Maryland Psychiatric Society held a meeting at the Medical Library, Baltimore, May 10, to organize a psychiatric base hospital unit, and to offer their services and facilities in the state to the government, for the purpose of affording care and treatment for soldiers and sailors who will suffer from nervous and mental disorders as a result of the war. A committee was appointed to confer with the governor relative to the expense of the unit. The most suitable location for the hospital is believed to be at the Spring Grove State Hospital, Catonsville, in the recently completed Psychopathic Reception Hospital Building, which is at present unoccupied, and can be used for treating between 200 and 300 patients. All that is needed to equip this building and place it at the disposal of the government within sixty to ninety days is an appropriation of about $40,000, which the special session of the legislature will be asked to provide. The members of the committee are: Drs. Arthur P. Herring, Baltimore, chairman; Joseph C. Clark, Sykesville; J. Percy Wade, Catonsville; Robert P. Winterode, Crownsville; William R. Dunton, Jr., Townson; Andrew C. Gillis, Baltimore, and Henry J. Berkley, Baltimore.

Michigan State Medical Society Meets in Special Session.—The Michigan State Medical Society convened in special session in the Masonic Temple, Battle Creek, on May 10. The purpose of the meeting was to consider the duty of the profession in the war. Addresses were made by Dr. Andrew P. Biddle, Detroit, president of the Michigan State Medical Society, and other recognized leaders of the profession of the state emphasizing the obligations which must be met by physicians and calling for volunteers. Arrangements were made so that the medical boards authorized to pass on applications for the Medical Reserve Corps met during the day, received applications and examined the applicants. Dr. Reuben Peterson, Ann Arbor, chairman of the state committee on medical preparedness, made a report which outlined the activities taken by the component societies of the state association in providing the quota of physicians for the government services which Michigan should furnish and called attention to the work still to be done.

A report from the council was received and adopted. This report authorized the council, at its discretion, to omit the annual session of the state organization which would ordinarily have convened in Battle Creek during the fall of this year.

A motion was adopted requesting that medical students and premedical students who agree to place their services at the command of the medical departments of the government, at the termination of their training, be given some insignia to indicate that they are following a course approved by the federal government.

Swiss Medical Profession on a War Footing.—War has not directly invaded Switzerland, but the military forces have been kept on a war footing for nearly three years. Dr. E. de Buman, in a recent address before a medical organization, told how this had affected the profession. He commented on the multiplicity of duties it entailed, the sacrifices that had to be made and the devoted services that had been lavished. "For some," he said, "there were the sudden separations, the sacrifice of a career *laboriously built up*, the crumbling of the dreams for the future. For others there was the extra work at the hour when weariness and age called for taking things less strenuously; for all it was the obligation to break with a life of well organized work and to sacrific on the altar of patriotism the most legitimate and the dearest aspirations. Our younger confrères left, full of zeal, to respond to the appeal of the military authorities. The older men added to their work in the hospitals and elsewhere an extra amount of labor and efforts, while the still older ones shouldered anew the burdens which they had partially shifted to younger men. . . . From behind the French front, in Belgium, in the Balkans and elsewhere, we hear of the devotion of Swiss physicians who are leading special missions at many points. In Switzerland it has been the medical profession that has made the most lavishly the greatest sacrifices. . . . The physicians of Switzerland took up the task of superintending the exchange of incapacitated prisoners of war, and the care of the thousands and thousands of interned sick and wounded. This whole matter was placed exclusively in the hands of the medical profession. And it can well be proud of the immense amount of good it has done and is doing in these lines."

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest; such as relate to society activities, new hospitals, education, public health, etc.)

ARKANSAS

New Society Organized.—The Randolph County Medical Association was organized recently at Pocahontas. Dr. R. R. Johnson, Holmes, was elected president; Dr. William E. Hughes, Pocahontas, secretary, and Dr. Carl J. Scheid, Pocahantas, treasurer.

Medical Examiners Named.—The governor, on May 8, reappointed Dr. Oran D. Ward, England, and Dr. Thomas J. Stout, Brinkley, members of the State Board of Medical Examiners, and appointed Dr. Hugh H. Henry, Eagle Mills, a member of the board to succeed Dr. James C. Wallis, Arkadelphia, who was ineligible on account of having served two terms on the board.

New State Officers.—At the forty-first annual meeting of the Arkansas Medical Society, held in Little Rock, May 1-3, under the presidency of Dr. Merrieman L. Norwood, Lockesburg. Jonesboro was selected as the next place of meeting and the following officers were elected; president, Dr. William Breathwit, Pine Bluff; vice presidents, Drs. Homer A. Stroud, Jonesboro; Edward F. Ellis, Fayetteville, and William W. York, Ashdown; secretary, Dr. Clinton P. Meriwether, Little Rock (reelected); treasurer, Dr. William R. Bathurst, Little Rock; delegates to the American Medical Association, Drs. William T. Wootton, Hot Springs; Thomas F. Kittrell, Texarkana, and Clinton P. Meriwether, Little Rock, and councilors, first district, Dr. John H. Stidham, Hoxie; third district, Dr. Henry H. Rightor, Helena; fifth district, Dr. Foster Jarrell, Huttig; seventh district, Dr. James E. Jones, Sheridan, and ninth district, Dr. Leonidas Kirby, Harrison.

ILLINOIS

Smallpox at Stronghurst.—On account of the prevalence of smallpox at Stronghurst, where thirty-four cases have been reported, Dr. Edwin B. Godfrey, Springfield, of the state board of health, has been sent to take charge of the situation. All public meetings have been prohibited, churches and schools have been closed and general vaccination has been made.

Public Health and Welfare Meeting.—The first annual convention of the Illinois Public Health and Welfare Association was held in Springfield, April 12, under the presidency of Dr. George Thomas Palmer, Springfield. The presidential address described the formation and character of the association. In the absence of Dr. James W. Pettit of Ottawa, Mr. Thurber read a paper on the general subject of tuberculosis control. The association adopted resolutions endorsing the efforts of the newly created department of public health as regards the training and licensure of midwives; the safeguarding of the health of the Illinois troops especially against tuberculosis, and the senate bill which gives the state department of public health supervision over the installation and operation of public water supplies and sewerage; urging the governor and legislature to make adequate appropriations for the proper conduct of the state department of public health in all its activities, and endorsing the efforts of the Illinois Society for the Prevention of Blindness to prevent blindness and conserve the vision of citizens of the state.

Chicago

Personal.—Dr. Charles P. Caldwell has been reelected president of the board of directors of the Municipal Tuberculosis Sanitarium and Mr. T. Bowden De Forest has been elected secretary to succeed Dr. John Dill Robertson.——Dr. Frank Billings has been named as secretary of the Illinois State Council of Defense.

Smallpox.—Five cases of smallpox were discovered near Forty-Seventh and Federal Streets, May 2. Forty vaccinators were ordered to go to this district and vaccinate all those who had not been vaccinated recently. During the first four months of 1917, sixty cases of smallpox were reported, more than for both 1915 and 1916.

The Ricketts Prize.—On May 3, the anniversary of the death of Dr. Ricketts from typhus fever, the Howard Taylor Ricketts prize for research by students in the departments of pathology, bacteriology, and hygiene in the University of Chicago was awarded to Enrique E. Ecker, for his work entitled, "The Pathogenic Effect and the Nature of a Toxin Produced by Bacillus Paratyphosus B."

Hospital Purchases Building Site.—The Deaconess Institute of the Swedish Evangelical Lutheran Church has purchased the property of the United States Brewing Company at Garfield Avenue and Sedgwick Street as the new Augustana Hospital. The property is 379 by 268 feet. The consideration named in the deed is $100,000 and the buildings are expected to cost between $80,000 and $90,000.——Mr. Charles J. Happel has been promoted from business manager to general superintendent of the Municipal Tuberculosis Sanitarium.——Dr. Maximilian Herzog has been appointed superintendent of research work at the institution.——Mr. Frank E. Wing, business director of the sanatorium, has been appointed general secretary of the United Charities, Rochester, N. Y.

State Medical Society Meeting.—At the sixty-seventh annual meeting of the Illinois State Medical Society, held in Bloomington, May 15-17, under the presidency of Dr. William L. Noble, Chicago, the following officers were elected: president, Dr. Elmer B. Cooley, Danville; president-elect, Dr. Edward W. Fiegenbaum, Edwardsville; vice presidents, Drs. Edwin P. Sloan, Bloomington, and Sadie Bay Adair, Chicago; secretary, Dr. Wilbur H. Gilmore, Mount Vernon; treasurer, Dr. A. J. Markley, Belvidere; councilors, first district, Dr. Emil Windmueller, Woodstock; second district, Dr. Edwin S. Gillespie, Wenona, and eighth district, Dr. Cyrus E. Price, Robinson; delegates to the American Medical Association, Drs. Don W. Deal, Springfield; Roy R. Ferguson, Chicago; Charles J. Wahlen, Chicago; Alban L. Mann, Elgin; William O. Krohn, Chicago, and Clarence B. King, Chicago. Springfield was selected as the meeting place for 1918.

INDIANA

Barber Shops Closed.—Complying with an order issued by the state health commissioner, all barber shops in Hartford City have been closed for disinfection on account of the prevalence of "barber's itch."

New Building for University.—Steps have been taken to insure the erection of a new building for the Indiana University School of Medicine on a site near the Robert W. Long Hospital, Indianapolis.

Society Reorganized.—Physicians of White County met at Monticello, April 20, and reorganized the White County Medical Society, electing the following officers: president, Dr. Guy R. Coffin, Monticello; vice president, Dr. Ross M. Reagan, Monon; secretary, Dr. Homer B. Gable, Monticello, and treasurer, Dr. Madison T. Didlake, Monticello.

Personal.—Dr. Wilbur R. Hurst has been appointed local surgeon of the Louisville and Nashville Railway at Evansville, succeeding Dr. Pitt Y. McCoy, deceased.——Dr. Mitchell O. De Vaney, Indianapolis, has been appointed health commissioner of Marion County to succeed Dr. Jay D. Nusbaum.——Dr. Joseph Rilus Eastman, Indianapolis, has returned after ten months in charge of an army base hospital in Vienna.

KANSAS

McCormack Lectures at Lawrence.—Dr. Arthur T. McCormack, secretary of the Kentucky State Board of Health, delivered a course of lectures at the state university, Lawrence, during the last week of April and also attended the meeting of the city and county health officers, which was held in that city.

State Medical Society Meeting.—At the fifty-first annual meeting of the Kansas Medical Society, held in Salina, May 2-4, under the presidency of Dr. James W. May, Kansas City, the following officers were elected: president; Dr. Charles S. Huffman, Columbus; vice presidents, Drs. Tyler D. D. Blasdel, Parsons; Elmer E. Morrison, Great Bend, and Henry E. Haskins, Kingman; secretary, Dr. John F. Hassig, Kansas City, and treasurer, Lewis H. Munn, Topeka; delegate to the American Medical Association, Dr. James W. May, Kansas City; councilors, fourth district, O. Portis Davis, Topeka; fifth district, John J. Brownlee, Hutchinson, and third district, J. S. Mitchell. Kansas City was selected as the place of meeting for 1918.

MARYLAND

Johns Hopkins Hospital Needs Money.—The trustees of the Johns Hopkins Hospital have issued a letter to a limited number of persons in which they draw attention to the fact that the institution is in need of the sum of about $30,000 to cover a deficit caused not alone by the increase in the cost of supplies, but also of the heating material of the institution. The hospital trustees feel that they will have to close the Johns Hopkins Convalescent Home for Crippled Children, one of the branches of the hospital, if sufficient sums are not contributed to enable them to keep this institution open. The main hospital is crowded and there is a waiting list of many persons who need medical attention.

Packing House at State Hospital.—The management of the Springfield State Hospital, at Sykesville, has adopted a plan by which it expects to increase the farm products at the institution. Last year Dr. Joseph C. Clark, the superintendent, had a small packing house erected at the institution and in this some 4,000 gallon cans of tomatoes were packed, also 3,000 cans of apples and peaches. This spring the plant will be enlarged and an effort to can vegetables in sufficient quantities to supply the hospital. The labor of preparing the fruit for packing will be done by women patients; some forty-five will be detailed to this work. In addition to conserving the resources of the hospital, the management thinks that employment for the women inmates will be of great value.

NEBRASKA

County Society Organizes.—Physicians of Antelope County met at Neligh, April 23, and perfected the organization of the Antelope County Medical Association, electing Dr. Stanley C. Clements, Neligh, president, and Dr. Uen S. Harrison, Topeka, secretary-treasurer.

State Medical Society Meeting.—The Nebraska State Medical Association held its forty-ninth annual convention at Lincoln, May 8-10, under the presidency of Dr. William S. Milroy, Omaha, and the following officers were elected: president, Dr. Charles L. Mullins, Broken Bow; vice presidents, Drs. Lucien Stark, Hartington, and Asa W. Montgomery, Stella; secretary, Dr. Joseph M. Aikin, Omaha (reelected); treasurer, Dr. Alexander S. von Mansfelde, Ashland, and librarian, Dr. William P. Wherry, Omaha.

NEW JERSEY

Course in Sanitary Science.—Rutgers College, New Brunswick, announces the establishment of a course in sanitary science for the special preparation of public health officers.

Public Health Study.—The first meeting in a course of study on public health, one of the activities of the Newark branch of the National League for Women's Service in the local board of health, was held in the health department auditorium, May 7, when boards of health, sanitary ordinances and the health code were discussed.

NEW YORK

Whitney Drug Bill Signed.—Governor Whitman has signed the Whitney committee's bill strengthening the law controlling the sale and distribution of habit forming drugs and providing that state health authorities may issue small amounts of narcotics in an effort to cure addicts.

Typhoid Lawsuits Settled.—The sixty-five lawsuits growing out of the typhoid fever cases which followed a trip of national guardsmen of Rhode Island, on the steamer *Rochester*, at the time of the Perry Centennial Celebration at Buffalo, was settled April 28, on a basis of $110,000 cash. The fever was traced to bad water furnished on the steamer, and fifty-nine cases of typhoid fever with six deaths resulted.

Personal.—Dr. Daniel S. Burr has resigned after eighteen years' service as health officer of Binghamton, and on his retirement was presented with a handsomely engraved cane by the employees of the board of health.——The completion by Dr. Louis P. Faust, Schenectady, of forty years in the practice of medicine, was celebrated, April 10, by the Schenectady County Medical Society, which gave a dinner in honor of Dr. Faust, at the Mohawk Club.

Meeting of Women Physicians.—The eleventh annual meeting of the Women's Medical Society of New York State was held in Utica, April 23, under the presidency of Dr. Eveline P. Ballintine, Rochester. The following officers were elected: president, Dr. Emily Dunning Barringer, New York; vice presidents, Drs. Marie L. Chard, New York; Mary T. Greene, Castile, and Florence I. Staunton, Utica; secretary. Dr. Ethel Doty Brown, New York, and treasurer, Dr. Phoebe M. Van Voast, New York.

New York City

Oral Hygiene Week.—The week beginning May 13 was celebrated in this city as "Oral Hygiene Week." Representatives of the various dental societies, the department of health and the department of education have cooperated to make the program of the week interesting and instructive. The usual methods, lectures, lantern slides and moving pictures, posters, pamphlets, toothbrush drills, etc., were employed to awaken public interest.

Instruction in Diagnosis of Pulmonary Tuberculosis.—The courses of instruction in contagious diseases given to the practicing physicians of the city during the past two years by the department of health have been so well received that it has been decided to inaugurate a similar course of instruction in the early diagnosis of pulmonary tuberculosis. The courses are of two weeks' duration, three sessions a week, and will be held in the tuberculosis clinics of the different boroughs. There are no fees, but physicians enrolling are expected to attend regularly. Applications may be made in writing to Dr. Bertram H. Waters, Bureau of Preventable Diseases, Department of Health, 139 Centre Street. The application should state the physician's choice for morning or afternoon course.

NORTH CAROLINA

District Physicians Meet.—At the annual meeting of the Ninth District Medical Society, held in Hickory, Mooresville was selected as the next place of meeting; Dr. Henry C. Menzies, Hickory, was elected president, and Dr. Andrew E. Bell, Mooresville, vice president.

Memorial Service for Aviator.—Memorial services for Sergt. J. R. McConnell, aviator in the French Service who was killed, March 18, were held at Carthage, April 1, and it was decided that the infirmary at the Eureka Farm Life School be named the McConnell Memorial Hospital.

Personal.—Dr. Julian G. Busby, Salisbury, has been forced to give up his practice for several months on account of a nervous breakdown, and is under treatment at Johns Hopkins Hospital, Baltimore.——Dr. Hubert A. Royster, Raleigh, was the guest of honor at the April meeting of the Pasquotank-Camden-Dare Counties Medical Society.

New Members of State Board.—The governor has appointed Dr. J. Howell Way, Waynesville, a member of the state board of health for a term of six years succeeding himself, and Dr. Edward C. Register, Charlotte, a member to succeed Dr William O. Spencer, Winston-Salem. The state medical society elected Drs. Charles O'H. Laughinghouse, Greenville, and Thomas E. Anderson, Statesville, members of the state board of health, to succeed themselves. At the meeting of the board for organization, Dr. J. Howell Way was elected president to succeed himself.

State Medical Society Session.—The sixty-third annual meeting of the Medical Society of the State of North Carolina, was held in Asheville, April 17-19, under the presidency of Dr. Charles O'H. Laughinghouse, Greenville. Pinehurst was selected as the place of meeting for 1918, and the following officers were elected: president, Dr. Isaac W. Faison, Charlotte; vice presidents, Drs. William DeB. MacNider, Chapel Hill, Joseph B. Greene, Asheville, and Benjamin F. Royal, Morehead City; secretary, Dr. Benjamin K. Hays, Oxford (reelected), and treasurer, Dr. William M. Jones, Greensboro. The dominant subject at the meeting was medical preparedness. Strong arguments regarding the need of the country for medical officers were made by Drs. George W. Crile, Cleveland, and John W. Long, Greensboro, and a number of physicians took their examinations at this time for the Medical Reserve Corps.

NORTH DAKOTA

Hospital News.—The General Hospital Association, Minot, has purchased for $21,000 the McKeane property, as a site for the new hospital. On this site a building will be constructed at a cost of $100,000. A campaign is on foot at Hazen to raise $25,000 with which to build a hospital.

Personal.—Dr. Jacob F. Brenckle has been appointed surgeon for the Minneapolis, St. Paul & Sault Sainte Marie Railway Company at Kulm.——Dr. Charles J. McGurren, Devil's Lake, has been reappointed secretary of the state board of health.——Dr. Joseph P. Weyrens, Taylor, has been appointed a Fellow of the Mayo Foundation, Rochester, Minn.

PENNSYLVANIA

Personal.—Dr. Eugene Swayne, Philadelphia, has been appointed a major in the Medical Corps and assigned to command field hospital No. 3, Philadelphia.——Dr. Daniel E. Sable of Pittsburgh has been appointed major in the Medical Corps and assigned to the First Artillery.

Philadelphia

Tyson Testimonial Dinner.—At the testimonial dinner (May 11) given by the Philadelphia County Medical Society to Dr. James Tyson on his retirement after fifty-four years of practice, Dr. Hobart A. Hare was toastmaster and addresses were made by the following speakers: Dr. Henry D. Jump, president of the Philadelphia County Medical Society; Dr. Abraham Jacobi, New York; Dr. William H. Welch, Baltimore; Dr. James W. Holland, and Dr. Edward Martin. Besides Drs. Jacobi and Welch, the out-of-town guests included Drs. Theodore C. Janeway, Baltimore; Lewellys F. Barker, Baltimore; Frederick C. Shattuck, Boston; George Dock, St. Louis, and Cyrus Lee Stevens, Athens, Pa.

CANADA

Verdict on Chiropractic.—Investigating the death of a M. C. R. engineer in St. Thomas, Ont., who died from the effects of typhoid fever while under the treatment of a chiropractor, a coroner's jury returned a verdict that his death was due to fever, lack of nourishment, and improper treatment. They recommended: "We strongly recommend to the city solicitor or proper officials that the provincial government be petitioned with a view to compelling chiropractors to pass their matriculation, and define in their diplomas the diseases in which they are entitled to practice. We further are strongly of the opinion that they should not be allowed to mislead the public by their professional advertising."

Ontario Medical Commission.—Mr. Justice Frank Hodgins, the commissioner, held a session of the commission on May 11 and 12, in the Parliament Building, Toronto. Dr. John Ferguson, retiring president of the Academy of Medicine, appeared before the commission and read a paper from the point of view of the medical practitioners which was authorized by the academy. He declared that osteopaths and chiropractors were not scientists, claiming that they were but rubbers and manipulators, and described their pretensions and treatments as "diabolical and shameful." In his opinion the chiropractors were offshoots of the osteopaths, and that while once they worked together, they were now separated. He further declared that Christian Scientists were not practitioners of medicine. Justice Hodgins expressed his gratification that the medical profession had placed their views in writing through Dr. Ferguson, and asked the Christian Scientists to do likewise, stating that a day would be set for hearing their side of the question.——Surg.-Gen. John T. Fotheringham, C. M. G., also appeared before the commission and outlined the treatment of soldiers during his two years at the front, as well as in command camps. The treatment, which consisted of physical exercises, baths, heat and light, he declared had proved very satisfactory. It was one largely of recent growth, but the work was being done under experienced medical men and the results were very satisfactory. Justice Hodgins read a summary of the treatment from a paper by Major R. Tait Mackenzie, A. M. A., in which he showed that 50 per cent. of the men so treated were able to return to the firing line, while a Belgian doctor declared that at least 35 per cent. of the patients he had treated were soon made fit again. Surg.-Gen. John T. Fotheringham declared that the training could not satisfactorily be obtained during the student's undergraduate course, but should be taken up in postgraduate course; and any doctors he had working under him in these cases would have to take the officers' training course. There were no civil hospitals that the general knew of that were fitted up as the hospitals at command camps in England were; at any rate not to the same extent, and a separate building was almost needed.——Lieut.-Col. Irving H. Cameron, Toronto, informed the commission of what he had learned in England while connected with the Duchess of Connaught Hospital. There had been a great stimulation in the use of these methods and a great advance in experience. The treatment was used for fractures, dislocations, sprains, and gunshot wounds, but he could not say whether surgical cases were treated more largely than medical cases.——Dr. Charles R. Dickson, Toronto, had some complaints to make to the commission. He objected to the Roentgen-ray treatment being given at the General Hospital, Toronto, by one who was not a medical man; and he thought the Toronto General Hospital should not advertise about its treatment for different things, as it was considered unethical for a medical man to advertise. Justice Hodgins asked Dr. Dickson to give him the dates of said advertisements, and he would look into the matter. Dr. Dickson thought medical men should pay more attention to the teaching of psychology; then they would not have to bother their heads about chiropractors et al.

GENERAL

Railway Surgeons Elect Officers.—At the annual meeting of the Association of Railway Chief Surgeons, held in Chicago, May 7, the following officers were elected: president, Dr. Daniel Z. Dunott, Baltimore; vice president, Dr. Arthur M. Hume, Owosso, Mich.; executive board, Drs. Oscar Lesesne, Detroit; Clarence W. Hopkins, Chicago, and Duncan Eve, Nashville, Tenn., and secretary-treasurer, Dr. Louis J. Mitchell, Chicago (reelected).

New Hospital in Porto Rico.—The new Presbyterian Hospital at Santurce, Porto Rico, was recently dedicated with much ceremony. It is built entirely of concrete and cost $145,000. The Medical Association of Porto Rico was represented at the ceremonies by Dr. Toro, the vice president, who remarked in his address that nothing in a country is such an index of the degree of civilization it has attained as the hospital.

"Patent" and Proprietary Medicines Dentifrices, etc., to Be Taxed.—The War Revenue Bill reported to the United States House of Representatives, on May 9, proposes a tax on proprietary and so-called patent medicines, whether for human beings or for animals, amounting to 5 per centum of the price for which sold. The tax is to be collected on all medicinal preparations, compounds, or compositions the manufacturer or producer of which claims to have any private formula, secret, or occult art for making or preparing, or which are prepared or sold under any letters patent or trade mark. The tax is to be applicable likewise if the substances are prepared by any formula, published or unpublished, and are held out or recommended by the manufacturers or sellers as proprietary medicines or proprietary medicinal preparations, or as remedies or specifics for any disease or affection relating to the human or animal body. A like tax is to be collected on petrolatums, tooth and mouth washes, dentifrices, tooth pastes, and toilet soaps and powders.

Conference on Habit-Forming Drugs.—A conference on habit-forming drugs, called by the National Drug Trades Conference, met in Washington, D. C., May 1 and 2. The National Drug Trades Conference itself was represented by delegates from its constituent organizations, the American Pharmaceutical Association, the National Wholesale Druggists' Association, the National Association of Retail Druggists, the American Association of Pharmaceutical Chemists, the American Drug Manufacturers' Association (formerly the National Association of Manufacturers of Medicinal Products), and the Proprietary Association of America. About twenty-five persons were present, including representatives from the United States Navy, the United States Public Health Service and the United States Internal Revenue Office. James H. Beal, Urbana, Ill., representing the American Pharmaceutical Association, submitted an analysis of the answers to a questionnaire sent by him to sixty-five members of the wholesale drug trade. Sales of narcotics sold on the official order blanks of the Internal Revenue Office showed an apparent average diminution of 66.2 per cent. Sales of proprietary compounds exempt under section 6 of the Harrison Narcotic Law showed diminished sales, according to eleven of those who responded to the questionnaire, amounting to from 10 to 80 per cent., but thirty-four others who responded said that there had been little or no change. Of the nonproprietary compounds exempt from the operation of the law, including paregoric, there had been increased sales. R. C. Stofer of Norwich, Conn., representing the American Association of Pharmaceutical Chemists, which comprises forty establishments selling to 40,000 physicians, reported that both physicians and druggists had worked earnestly for the control of the sale of habit-forming drugs. Sales in 1917 when compared with sales in 1915 show considerable decreases: cocain, 47 per cent.; opium, 34 per cent.; morphin, 45 per cent.; heroin, 29 per cent., and codein, 53 per cent. These decreases occurred despite a 40 per cent. increase in business generally. Heroin is apparently replacing codein and mor-

FORDHAM HOSPITAL—2. Open drop; ether; semiopen drop; closed open drop; gas ether; vapor; oxygen ether, Dr. P J Flagg

GERMAN HOSPITAL—See program, German Hospital, 9 a. m. Monday.

GOUVERNEUR HOSPITAL—2. Drop or closed: ether.

HARLEM HOSPITAL—2. Colonic anesthesia, oil ether; ethylchlorid-ether, open; vapor, and other methods, Dr. J. E. Lumbard.

HOSPITAL FOR DEFORMITIES AND JOINT DISEASES—2 Open drop· ether.

HOSPITAL FOR RUPTURED AND CRIPPLED—Open drop method: ether; children started with ethylchlorid.

JEWISH HOSPITAL, Brooklyn—2. Closed: ether vapor; nitrous oxid oxygen, Dr I. D Gruskal.

LONG ISLAND COLLEGE HOSPITAL, Brooklyn—2. Exhibition: anesthesia charts, Dr Erdmann.

LYING-IN HOSPITAL—2 Open cone: ether.

MEMORIAL HOSPITAL—2 Closed ether; nitrous oxid and ether; infiltration and conduction; novocain and epinephrin, Dr. W G Doran.

METROPOLITAN HOSPITAL, Blackwell's Island (boat leaves foot East 70th Street, 2 o'clock)—2:30. Intravenous anesthesia, Dr W F. Honan.

MOUNT SINAI HOSPITAL—2. Endopharyngeal insufflation, nitrous oxid oxygen and ether, anesthesia in major surgery; endothoracic surgery.

NEUROLOGICAL HOSPITAL—2. Etherometer; ether

NEW YORK HOSPITAL—2. Endotracheal and other pharyngeal insufflation, Dr. Alma Vedin

NEW YORK INFIRMARY FOR WOMEN AND CHILDREN—2. Demonstration, Dr. Alma Vedin.

PARK HOSPITAL—2. Colonic; oil ether, Dr. H D. Meeker

POLYCLINIC HOSPITAL—2. Extradural or sacral, cocain combined with gas oxygen; heated oxygenated ether vapor used in brain surgery and abodominal surgery, Dr. C S. Hunt; extradural anesthesia, Dr J. M. Lynch.

POST-GRADUATE HOSPITAL—2 Continuous, nitrous oxid-oxygen; closed; nitrous oxid-oxygen-ether, Dr. Buchanan

PRESBYTERIAN HOSPITAL—2. General method: gas ether

ROOSEVELT HOSPITAL—2. Endotracheal and endopharyngeal insufflation anesthetometer, Dr Booth

SKIN AND CANCER HOSPITAL—2. Warm oxygenated ether vapor, Dr. J T. Gwathmey; colonic anesthesia oil ether, Dr. E M. Foote; local anesthesia, Dr W. S. Bainbridge

ST BARTHOLOMEW'S HOSPITAL—7·30. Warm nitrous oxid and oxygen ether vapor for adenoid and tonsil cases, Drs. Gwathmey and Palmatier.

ST. LUKE'S HOSPITAL—2 Mechanical drop ether; endotracheal, nitrous oxid-oxygen in major surgery, Dr H C. Luke.

ST. MARY'S FREE HOSPITAL FOR CHILDREN—Ether

ST VINCENT'S HOSPITAL—2 Ether, Dr W G Doran.

WOMEN'S HOSPITAL—2. Open drop· ether.

Tuesday Morning, June 5

BETH ISRAEL HOSPITAL—9. Nitrous oxid oxygen ether, Dr. S B Ehrlich

BELLEVUE HOSPITAL—9. Open closed. ether.

BROOKLYN HOSPITAL—9 Nitrous oxid-oxygen, Dr. George Tong

GERMAN HOSPITAL—9. See program, German Hospital, 9 a m Monday

GERMAN HOSPITAL, Brooklyn—10 Warm oxygenated ether vapor, Dr. J. T. Gwathmey.

GOUVERNEUR HOSPITAL—9. Drop or closed ether.

HARLEM HOSPITAL—9 See program, Harlem Hospital, 2 p m Monday.

HOSPITAL FOR DEFORMITIES AND JOINT DISEASES—9 Open drop: ether.

HOSPITAL FOR RUPTURED AND CRIPPLED—9. Open drop ether; children started with ethylchlorid.

JEWISH HOSPITAL, Brooklyn—9 Closed, ether vapor, nitrous oxid oxygen, Dr. I. D. Kruskal

LONG ISLAND COLLEGE HOSPITAL, Brooklyn—9. Exhibition: anesthesia charts

MEMORIAL HOSPITAL—9. See program, Memorial Hospital, 2 p m Monday.

METHODIST EPISCOPAL HOSPITAL, Brooklyn—9. Drop method; nitrous oxid ether oxygen.

NEW YORK INFIRMARY FOR WOMEN AND CHILDREN—9 1. Demonstration, Dr. Alma Vedin

POLYCLINIC HOSPITAL—9 1. Dr. C S Hunt; see program, Polyclinic Hospital, 2 p. m Monday. 10. Local anesthesia, Dr. J A. Bodine

POST-GRADUATE HOSPITAL—9 See program, Post Graduate Hospital, 2 p m. Monday

PRESBYTERIAN HOSPITAL—9. General: gas ether

ROOSEVELT HOSPITAL—9. Endopharyngeal inhalation, Dr. P. J. Flagg.

ST. CATHERINE'S HOSPITAL, Brooklyn—9. See program, St. Catherine's Hospital, 9 a. m. Monday

ST. GILES HOSPITAL—8. Ether with nitrous oxid and oxygen: closed, Dr. Erdmann

ST. LUKE'S HOSPITAL—9. Mechanical drop: ether; endotracheal; nitrous oxid oxygen in major surgery.

ST MARY'S FREE HOSPITAL FOR CHILDREN—9. Ether inhalation

ST. PETER'S HOSPITAL, Brooklyn—8:30. Ether; Allis inhaler.

Tuesday Afternoon, June 5

HOSPITAL FOR RUPTURED AND CRIPPLED—9. Open drop: ether; children started with ethylchlorid.

ROOSEVELT HOSPITAL—9. Endopharyngeal inhalation, Dr. P. J. Flagg

ST. CATHERINE'S HOSPITAL, Brooklyn—9. See program, St. Catherine's Hospital, 9 a m. Monday.

ST GILES HOSPITAL—8. Ether with nitrous oxid and oxygen; closed, Dr. Erdmann.

ST. LUKE'S HOSPITAL—9. Mechanical drop: ether; endotracheal; nitrous oxid-oxygen in major surgery.

ST MARY'S FREE HOSPITAL FOR CHILDREN—9. Ether inhalation.

ST. PETER'S HOSPITAL, Brooklyn—8:30 Ether; Allis inhaler.

Tuesday Afternoon, June 5

BELLEVUE HOSPITAL—2. Open and closed: ether.

BROOKLYN HOSPITAL—2. Nitrous oxid oxygen, Dr. George Tong

CUMBERLAND STREET HOSPITAL, Brooklyn—2 See program, Cumberland Street Hospital, 2 p. m. Monday.

EYE AND EAR HOSPITAL, Brooklyn—2. Exhibition apparatus, Dr Erdmann

FORDHAM HOSPITAL—2. See program, Fordham Hospital, 2 p m. Monday

GERMAN HOSPITAL—2. See program, German Hospital, 9 a m Monday.

GOUVERNEUR HOSPITAL—2. Drop or closed ether

HARLEM HOSPITAL—2 See program, Harlem Hospital, 2 p m Monday.

HOSPITAL FOR DEFORMITIES AND JOINT DISEASES—2. Open drop· ether

HOSPITAL FOR RUPTURED AND CRIPPLED—2 Open drop· ether; children, ethylchlorid

JEWISH HOSPITAL, Brooklyn—2 Closed method· ether vapor; nitrous oxid oxygen, Dr I D Kruskal

LONG ISLAND COLLEGE HOSPITAL, Brooklyn—2 Exhibition anesthesia charts.

LYING IN HOSPITAL—2 Open cone; ether.

MEMORIAL HOSPITAL—2. See program, Memorial Hospital, 2 p m Monday.

METHODIST EPISCOPAL HOSPITAL, Brooklyn—2. Drop method. ether.

METROPOLITAN HOSPITAL, Blackwell's Island—2·30 See program, Metropolitan Hospital, 2·30 p m Monday.

MOUNT SINAI HOSPITAL—2. Endopharyngeal insufflation; nitrous oxid-oxygen and ether; anesthesia in major surgery; endothoracic surgery, device for artificial respiration, endopharyngeal anesthesia, Dr W Branower; endotracheal anesthesia, Dr Charles A. Elsberg

NEW YORK CITY CHILDREN'S HOSPITAL AND SCHOOLS, Randall's Island (boat from foot East 125th Street)—2. Spinal anesthesia, Dr William Seaman Bainbridge; ethylchlorid, warmed oxygenated ether vapor, Drs Munkittrick and Gwathmey.

NEW YORK HOSPITAL—2. Gas-oxygen, Dr. Alma Vedin

POST-GRADUATE HOSPITAL—2. Continuous· nitrous oxid oxygen; closed: nitrous oxid oxygen-ether, Dr. Buchanan; nitrous oxid-oxygen ether, Dr R C Coburn; oil ether colonic, Dr B. Douglass; spinal analgesia, Dr. D W Furniss

PRESBYTERIAN HOSPITAL—2. General; gas ether

ROOSEVELT HOSPITAL—2 Endotracheal and endopharyngeal insufflation anesthetometer, Dr. Booth.

ST BARTHOLOMEW'S HOSPITAL—7 30. Warmed nitrous oxid and oxygen ether vapor for adenoids and tonsils, Drs. J. T. Gwathmey and Palmatier

ST. LUKE'S HOSPITAL—2. Mechanical drop ether; endotracheal; nitrous oxid oxygen in major surgery, Dr. H C Luke

ST MARK'S HOSPITAL—2. Nitrous oxid oxygen ether sequence, Dr S B. Ehrlich

ST VINCENT'S HOSPITAL—2. Ether, Dr W. G. Doran

ST MARY'S FREE HOSPITAL FOR CHILDREN—2 Ether inhalation

SKENE'S SANITARIUM, Brooklyn—2·30. Ether; Allis inhaler

STATEN ISLAND HOSPITAL—2. Gas ether; open; closed, Dr. Louise Rosenzweig

WOMEN'S HOSPITAL—2. Open drop: ether.

ORTHOPEDIC SURGERY

Virgil P Gibney, Chairman
Fred H Albee
Henry W. Frauenthal
Russell A. Hibbs
T Halsted Myers
Arthur H Cilley, Secretary
P. William Nathan
Reginald H Sayre
Walter Truslow

Monday Morning, June 4

BELLEVUE HOSPITAL, Outdoor Department—10 After care infantile paralysis; demonstration electricity and exercises, Drs. Reginald H Sayre, F J. Wettervik.

BETH ISRAEL HOSPITAL—9 After care infantile paralysis; ambulatory orthopedics, Drs. William Frieder, Edgar Oppenheimer, Isadore Leavy

GERMAN HOSPITAL—10 Demonstration Zander apparatus, Dr. Jacob Heckman

VANDERBILT CLINIC—10 After care infantile paralysis; ambulatory orthopedics, Drs Charles H Jaeger, chief, Samuel Boorstein, Harry D. Sonnenschein.

Monday Afternoon, June 4

BELLEVUE HOSPITAL, Ward 40—2. Hospital after care infantile paralysis; use of electric baking and massage, Dr. Reginald H. Sayre

BROOKLYN HOSPITAL—3 After care infantile paralysis; ambulatory orthopedics, Drs Walter Truslow, chief; E. I. Wolfert, G H A. Hunter.

CORNELL UNIVERSITY MEDICAL COLLEGE—1. After care infantile paralysis; ambulatory orthopedics, Drs. Arthur Gilley, chief; N. P. Breed.

ENGINEERING SOCIETIES' BUILDING, 29 West 39th Street, Auditorium—5. Motion picture exhibition, bone graft (inlay); replacing portion of humerus, Dr. Fred H. Albee

HOSPITAL FOR DEFORMITIES AND JOINT DISEASES (Dispensary)—2. Obliterating endarteritis, Dr. Henry W. Frauenthal, surgeon-in-chief; late operations for infantile paralysis, Dr Herman C. Frauenthal; focal infections, Dr. Harry Finkelstein; syphilitic joints, Roentgen ray, Dr. Joseph Roth; gonorrheal joint disease, male, Dr. Max Strunsky; gonorrheal joint disease, female, Dr. John C. Bradner, orthopedic operations, operating room, Dr. Henry W. Frauenthal

HOSPITAL FOR RUPTURED AND CRIPPLED—1. After care infantile paralysis; ambulatory orthopedics, postoperative cases; corrective gymnastics, Miss Calderwood 2 Fractures of the neck of the femur in children, Dr. H L. Taylor; teeth as an indication of bone disease, Dr. F. W Roberts; treatment of fractures, new methods, Dr. G W. Hawley; hemorrhagic osteomyelitis, Dr. George Barrie 3 Bone dystrophies, Dr W W. Strang, quiet hip disease, Dr. William Frieder.

JAMAICA HOSPITAL—2. After care infantile paralysis, Dr. Henry C Courten

LEBANON HOSPITAL—2 After care infantile paralysis; ambulatory orthopedics, Drs Samuel Kleinberg, chief; M. Cohn, M. Kaiden; tuberculin in bone and joint tuberculosis, Dr J. Braun.

MOUNT SINAI HOSPITAL DISPENSARY—1. After care infantile paralysis; ambulatory orthopedics, Drs L Oppenheimer, Sigmund Epstein

NEW YORK CITY CHILDREN'S HOSPITAL AND SCHOOLS, Randall's Island (East 125th Street ferry half hourly)—2. Clinic. Dr Benjamin F. Riley.

ORTHOPEDIC DISPENSARY AND HOSPITAL—2 After care infantile paralysis; ambulatory orthopedics, Drs Russell A Hibbs, surgeon in chief; Benjamin P Farrell, assistant surgeon in chief; R E Humphries, chief of clinic; E W. Lawrance, Nathaniel Mills, R S Farr.

POST-GRADUATE HOSPITAL—4 30 Ambulatory orthopedics; after care infantile paralysis, Drs Henry Ling Taylor, P. W. Roberts, William Frieder.

UNIVERSITY AND BELLEVUE MEDICAL COLLEGE CLINIC—3 After care infantile paralysis; ambulatory orthopedics, Drs Reginald Sayre, F J. Wettervik.

Tuesday Morning, June 5

BELLEVUE HOSPITAL, Outdoor Department—10 After care infantile paralysis, Drs Reginald H Sayre, F J. Wettervik.

BETH ISRAEL HOSPITAL—9 After care infantile paralysis; ambulatory orthopedics, Drs William Frieder, Henry Finkelstein

FORDHAM HOSPITAL—10 Hemiplegics, cases showing beneficial effects of early evacuation of the clot, case showing restoration of function in a resected nerve with considerable loss of nerve tissue, Erb's palsy; postoperative cases; case complete recovery following removal of enlarged transverse process of fifth lumbar vertebra, Drs Alfred S Taylor, Samuel W Boorstein; general after care infantile paralysis, postoperative cases; old cases infantile paralysis; chondroma following trauma, Drs Samuel W. Boorstein, S. Brody

GERMAN HOSPITAL—9. Demonstration of Zander apparatus, Drs Charles H Jaeger, Charles H. Sanford

HOSPITAL FOR RUPTURED AND CRIPPLED—8 30 Operations, Dr. Virgil P Gibney, surgeon in chief 9.30 Operations Dr Royal Whitman 10·30 Operations, Dr Henry Ling Taylor.

LONG ISLAND COLLEGE HOSPITAL, Brooklyn (Polhemus Dispensary)—10 After care infantile paralysis; ambulatory orthopedics, Drs Jacques C Rushmore, S L Fisher, H C Fett, H G Durham

ORTHOPEDIC DISPENSARY AND HOSPITAL—8 Operations, Drs Russell A Hibbs, surgeon in chief, B P Farrell, assistant surgeon in chief, Robert E Humphries, Herbert A Durham

SEA SIDE HOSPITAL, Coney Island—10 After care infantile paralysis, 100 ward cases, Drs Walter Truslow, E B Ebright.

VANDERBILT CLINIC—10 After care infantile paralysis; ambulatory orthopedics, Drs Charles H Jaeger, chief, William Frieder

Tuesday Afternoon, June 5

BELLEVUE HOSPITAL, Ward 40—2 Hospital after care, demonstration baking and massage, Dr Reginald H Sayre; Wards I 7, K 7, cyst of femoral neck; adult and adolescent rickets; slipping of upper epiphysis of femur, Dr Reginald H Sayre; round cell sarcoma of head of tibia treated by enucleation and radium, Dr Joseph B Bissell

CORNELL UNIVERSITY MEDICAL COLLEGE—1 After care infantile paralysis; ambulatory orthopedics, Dr. John S Ware

GERMAN EAST SIDE POLYCLINIC—1 30 After care infantile paralysis; ambulatory orthopedics, postoperative cases, Dr Dexter D Ashley

HOSPITAL FOR RUPTURED AND CRIPPLED—1. After care infantile paralysis; treatment of scoliosis (*a*) by corrective gymnastics, Miss Calderwood, (*b*) by plaster of Paris jackets and braces, Dr S Kleinberg, photographic and Roentgen ray demonstration of orthopedic conditions, Mr Percy R Ashley, treatment of congenital clubfoot in babies, and general plaster of Paris work, Dr William L Sneed, result of operation for deformities following poliomyelitis, Dr Royal Whitman 2 30 Fracture of neck of femur, Whitman's abduction method, Dr B H Whitbeck; treatment of injury to tibial tubercle (Osgood Schlatter's disease), Dr Richmond Stevens 2:30 Joint manifestations due to tonsillar affections; operations, Dr James J. King

LEBANON HOSPITAL—2 After care infantile paralysis; ambulatory orthopedics, Dr. Jacob Grossman

LONG ISLAND COLLEGE HOSPITAL, Brooklyn (Polhemus Dispensary—12 30 Operations, Dr. Jacques C Rushmore

MONTEFIORE HOME AND HOSPITAL—2 Chronic multiple arthritis, cases, peculiar types chronic bone disease; cases, Dr George R Elliott, neurologic conditions associated with polyarthritis, Drs I Strauss, P William Nathan; pathology and treatment, polyarthritis, Dr P William Nathan, tuberculous arthritis treated by heliotherapy, neglected hemiplegics treated by orthopedics, Dr S W Boorstein

MOUNT SINAI DISPENSARY—1 After care infantile paralysis; ambulatory orthopedics, Drs P William Nathan, William Frieder, Isadore Leavy

NEW YORK AMERICAN BABY HOSPITAL, Brooklyn—2 After care infantile paralysis; cases; operative clinic, Dr. Louis C Ager

ORTHOPEDIC DISPENSARY AND HOSPITAL—2 After care infantile paralysis; ambulatory orthopedics, postoperative cases, Drs Russell A Hibbs, surgeon in chief; B P Farrell, assistant surgeon in chief; H J. Bogardus, visiting surgeon; H A Durham, chief of clinic, Reginald Burbank, Frederick Williams, C. H Saford.

POST GRADUATE HOSPITAL—4: 30 Bone operations, Dr. F. H Albee

ST LUKE'S HOSPITAL—2: 30 After care infantile paralysis; ambulatory orthopedics; operations, Dr T Halsted Myers.

UNIVERSITY OF BELLEVUE MEDICAL COLLEGE (Hyde operating room)—3 Torticollis operation, Dr. Reginald H Sayre; after care infantile paralysis; ambulatory orthopedics, Drs Reginald H Sayre, J J Nutt

(To be continued next week)

Marriages

Harold Frank Tidwell, M.D., West New York, N. J., to Miss Kathleen Galloway of New York, April 11.

John Adolph Forst, M.D., Elmhurst, N. Y., to Miss Frances May Nicholson of Flushing, N. Y., April 30.

Frederick Walker St. Clair, M.D., to Miss Loretta Louise Grant, both of Indiana, Pa., March 31.

John Edward Gillespie Beardsley, M.D, to Miss Minerva Post, both of Philadelphia, April 30.

P. A. Surg Martin Donelson, U. S. Navy, to Miss Virginia Dance of Danville, Va, April 25.

Edward H Moss, M.D., Cincinnati, to Miss Mabel Willis of Bellevue, Ky., April 30.

John B Frick, M.D., to Miss Ardis M. Tanquay, both of Philadelphia, May 3.

Deaths

Marden Babin, M.D., Centerville, Mich.; Western Reserve University, Cleveland, 1867; aged 77; a Fellow of the American Medical Association, and president of the St. Joseph County Medical Society in 1910; once president of the village of Centerville and for twenty years president of the village board of education; a member of the state senate in 1891 and 1893, a veteran of the Civil War; died at the home of his son in Battle Creek, Mich, April 10.

William Watt Kerr, M.D., San Francisco; University of Edinburgh, Scotland, 1881; aged 59; a Fellow of the American Medical Association; professor of clinical medicine in the University of California, San Francisco; visiting physician to the San Francisco City and County Hospital and the Children's Hospital; consulting physician to St. Luke's Hospital and the San Francisco Lying-In Hospital; died at his home, April 26, from heart disease.

Herman Craft, M.D., Stone Ridge, N. Y.; New York University, New York, 1859; aged 80; a member of the Medical Society of the State of New York; assistant surgeon of the One Hundred and Forty-Third New York Volunteer Infantry, and later in the regular establishment during the Civil War; a member of the state assembly in 1886, and from 1887 to 1895, township supervisor; died at his home, April 21.

John Theodore DeMund, M.D., Ridgewood, N. J.; University of Pennsylvania, Philadelphia, 1864; aged 77; formerly a Fellow of the American Medical Association; a member of the Medical Society of New Jersey; twice coroner of Bergen County; surgeon of the Fifty-Ninth Pennsylvania Volunteer Infantry during the Civil War; died at his home, April 30.

William Thomas Adams, M.D., Elgin, Minn.; Rush Medical College, 1874, aged 67; a Fellow of the American Medical Association; secretary of the Southern Minnesota Medical Society, since its foundation; one of the best known general practitioners of Southern Minnesota; died at his home, April 25, from chronic interstitial nephritis.

Edwin Bradbury Lyon, M.D., West Hartford, Conn.; Berkshire Medical College, Pittsfield, Mass, 1862; aged 86; a member of the Connecticut State Medical Society; demonstrator of anatomy and prosector in surgery in his alma mater; surgeon of U. S Volunteers during the Civil War; died at his home, April 12

John J. Williams, M.D., Wayne, Neb ; State University of Iowa, Iowa City, 1880; aged 66; formerly a Fellow of the American Medical Association; a member of the Nebraska State Medical Association; at one time a member of the state legislature; died suddenly at his home, April 25, from heart disease.

Martin Piper Judkins, M.D., Rockland, Me.; Medical School of Maine, Brunswick, 1884; aged 63; a member of the Maine Medical Association; for twelve years coroner of Knox County and at one time a member of the Rockland Board of Health; died in a sanatorium at Wells, Me, April 26.

Matthew Charles O'Connor, M.D., New Haven, Conn.; College of Physicians and Surgeons in the City of New York, 1873; aged 68; a Fellow of the American Medical Association; one of the incorporators of the Knights of Columbus; died at his home, April 30, from cerebral hemorrhage.

Charles E. Simmons, M.D., New York; College of Physicians and Surgeons in the City of New York, 1864; aged 77; a member of the Medical Society of the State of New York and the New York Academy of Medicine; for ten years commissioner of charities of New York; died at his home, May 3.

Freeborn Stanton Lewis, M.D., Port Angeles, Wash.; Detroit Medical College, 1874; aged 68; a member of the Washington State Medical Association; postmaster of Port Angeles and for three terms mayor of the city; died at his home, April 8, from cerebral hemorrhage.

Owen E. Metzger, M.D., South Whitley, Ind.; University of Michigan, Ann Arbor, 1908; aged 35; a Fellow of the American Medical Association; died in the Lutheran Hospital, Fort Wayne, Ind., March 11, four days after an operation for appendicitis.

Joseph D. Alderson, M.D., Meadow View, Va.; Kentucky School of Medicine, Louisville, 1876; aged 74; formerly a Fellow of the American Medical Association; a member of the Medical Society of Virginia; died at his home, March 30, from myocarditis.

Thomas Stanley Hodge, Torrington, Conn. (license, Connecticut, 1893); aged 69; formerly president of the Connecticut Eclectic Medical Association; secretary of the Connecticut Eclectic Medical Examining Board; died at his home, April 20.

James W. McClanahan, M.D., Forest City, Mo.; Ensworth Medical College, St. Joseph, Mo., 1889; aged 66; a member of the Missouri State Medical Association; died in Ensworth Hospital, St. Joseph, Mo., February 17, from carcinoma of the stomach.

William Gunton Budington, M.D., New York City; College of Physicians and Surgeons in the City of New York, 1872; aged 71; who retired from practice in 1881; died in his apartments in New York City, April 15, from chronic bronchitis.

Ida B. Parker, M.D., Orange, Calif.; University of Southern California, Los Angeles, 1895; aged 47; formerly a Fellow of the American Medical Association and president of the Orange County Medical Society in 1913; died at her home, April 15.

James Alfred Andrews, M.D., Kearney, Neb.; Rush Medical College, 1893; aged 57; formerly a Fellow of the American Medical Association; a member of the Nebraska Legislature, in 1901; died in Green Gables Sanitarium, Lincoln, Neb., April 28.

Sum S. Linder, M.D., Union, S.C.; Medical College of the State of South Carolina, Charleston, 1876; aged 62; for many years a practitioner and scientific dairyman of Union County, S. C.; died in his office, in Union, March 31, from acute gastritis.

Rae Felt, M.D., Eureka, Calif.; University of California, San Francisco, 1890; aged 47; a Fellow of the American Medical Association; died in St. Francis Hospital, San Francisco, April 18, from complications following gallstones.

George Roger Smith, M.D., Bloomington, Ill.; Northwestern University Medical School, Chicago, 1887; aged 57; formerly a Fellow of the American Medical Association; a member of the Illinois State Medical Society; died at his home, April 21.

Powhatan Clarke, M.D., Douglaston, N. Y.; New York University, New York City, 1858; aged 81; for thirty-eight years professor of chemistry in Baltimore Medical College; died at the home of his daughter in Douglaston, April 25.

John N. Mallory, Emily, Minn. (license Minnesota, exemption certificate, 1883); aged 65; formerly a member of the Minnesota State Medical Association; a practitioner since 1874; died in a hospital in Brainerd, Minn., April 17.

James A. Bigelow, M.D., Elkhart, Ind.; Yale University, New Haven, Conn., 1861; aged 79; surgeon of the Eighth and Eleventh Connecticut Volunteer Infantry, during the Civil War; died at his home, April 1, from pneumonia.

William Sanford Kingsbury, M.D., Clastonbury, Conn.; Yale University, New Haven, 1896; aged 49; a Fellow of the American Medical Association; a specialist in obstetrics; died at his home, April 9, from angina pectoris.

Michael J. Coholan, M.D., New Britain, Conn.; New York University, New York City, 1865; aged 72; a member of the Connecticut State Medical Society; died in Mercy Hospital, Springfield, Mass., April 14, from pneumonia.

Sylvester Byron Davis, M.D., Hollywood, Calif.; University of Michigan, Ann Arbor, 1875; aged 68; a member of the Medical Society of the State of California; died at his home, February 20, from chronic myocarditis.

John Dennis Tierney, M.D., Ridgewood, Long Island, N. Y.; Cornell University, New York City, 1911; aged 29; associate physician of St. Mary's Hospital, Jamaica, L. I.; died in that institution, April 17, from pneumonia.

Robert Bailey, M.D., Cleveland; Western Reserve University, Cleveland, 1870; aged 68; a member of the Ohio State Medical Association; and a member of the staff of St. Clair Hospital; died at his home, April 20.

John F. Cochran, M.D., Port Myers, Fla.; Memphis Medical College, Memphis, Tenn., 1871; aged 72; formerly a member of the Tennessee State Medical Association; died at his home, February 15, from anemia.

Rezin Warfield Hall, M.D., Moundsville, W. Va.; University of Maryland, Baltimore, 1874; aged 72; a Fellow of the American Medical Association; a veteran of the Civil War; died at his home, April 22.

John W. Harvey, M.D., Chico, Calif.; California Medical College, San Francisco, 1887; formerly a member of the Medical Society of the State of California; died in San Francisco, May 2.

George Henry Codding, M.D., Amenia, N.Y.; College of Physicians and Surgeons in the City of New York, 1881; aged 62; died in Dover Plains, N. Y., March 6, from arteriosclerosis.

Augustus Bosworth Stone, M.D., Linden, Ala.; University of Alabama, Mobile, 1886; aged 67; a member of the Medical Association of the State of Alabama; died at his home, April 4.

Joseph S. Lehman, M.D., Clarence Center, N. Y.; Unversity of Buffalo, N. Y., 1893; aged 70; a Fellow of the American Medical Association; died at his home, March 14, from pneumonia.

Joseph Spratt Dodds, M.D., Pittsburgh; Jefferson Medical College, 1875; aged 70; a specialist in proctology; died at the home of his daughter, in Pittsburgh, April 18, from pneumonia.

Joseph Wallace Haverfield, M.D., Uhrichsville, Ohio; Starling Medical College, Columbus, Ohio, 1878; aged 64; died in his office, February 12, from organic heart disease.

John Marlin Habel, M.D., Onancock, Va.; Homeopathic Medical College of Pennsylvania, Philadelphia, 1867; aged 91; died at the home of his nephew in Onancock, April 15.

Thomas Morris, M.D., Mount Zion, Ind.; Medical College of Fort Wayne, Ind., 1883; aged 68; a member of the Indiana State Medical Association; died at his home, April 17.

Thomas John Lally, M.D., Waterbury, Conn.; Albany, N.Y., Medical College, 1899; aged 41; a Fellow of the American Medical Association; died at his home, April 19.

Anson A. DePuy, M.D., Fruitvale, Calif.; University of California, San Francisco, 1881; aged 70; died in Providence Hospital, Oakland, Calif., April 8.

Joseph Moorhead Taylor, M.D., Altoona, Pa.; College of Physicians and Surgeons, Baltimore, 1885; died at his home, January 17, from heart disease.

John W. Morris, M.D., Wheeling, W. Va.; Pulte Medical College, Cincinnati, 1876; aged 64; died at his home, March 4, from cerebral hemorrhage.

Alfred Ernest Arthur McCann, M.D., Lowell, Mass.; McGill University, Montreal, 1892; aged 48; died in St. John's Hospital, Lowell, April 12.

William W. Yandell, M.D., Bedford, Ind.; University of Louisville, Ky., 1848; aged 88; died at his home, January 7, from cerebral hemorrhage.

W. T. Sutton, Ashbyburg, Ky.; (license, Kentucky, thirty-one years practice, 1894); aged 80; died at the home of his son in Ashbyburg, April 8.

James Rufus Pou, M.D., Uniontown, Ala.; Medical College of the State of South Carolina, Charleston, 1854; aged 84; died at his home, April 13.

William John Neill, M.D., Chicago; Rush Medical College, 1880; aged 66; an ophthalmologist; died at his home, April 18. from arteriosclerosis.

J. J. Moore, M.D., Trenton, Mo.; St. Louis Medical College, 1868; aged 71; died at Excelsior Springs, Mo., February 4, from pneumonia.

George E. Alexander, M.D., Hayward, Calif.; Jefferson Medical College, 1873; aged 69; died at his home, recently.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

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[Contribution from the Chemical Laboratory of the American Medical Association]

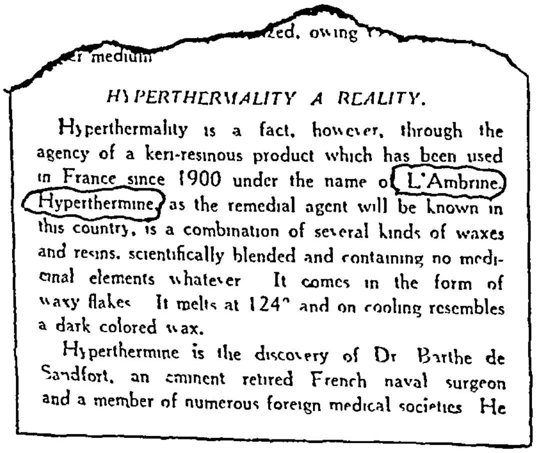
"AMBRINE" AND PARAFFIN FILMS*

Paul Nicholas Leech, Ph.D.

In the last year or so, the hot-wax or paraffin treatment of burns has been widely discussed both in medical and lay periodicals. Although the treatment is simply a modification of the well-known use of oil and ointments, it has received unusual attention, owing to the widespread sensationalism following the exploitation in France of a secret and therefore mysterious mixture, "Ambrine," the formula of Dr. Barthe de Sandfort. Owing to this publicity, it seemed desirable, to investigate the chemical composition, and to compare its physical properties with other waxlike substances

"Ambrine" is promoted as a dressing for burns, frostbites, neuritis, varicose ulcers, phlebitis, neuralgia, rheumatism, sciatica, gout, etc. It is a smoky-appearing substance, resembling paraffin in consistency and without odor. For application, "Ambrine is melted and applied to the wound either with a brush or with a specially devised atomizer. It cools quickly, and leaves a solid, protecting film."

It is said that de Sandfort "stumbled on this treatment by accident."[1] Being a sufferer of rheumatism, he had been benefited by hot mud baths; on returning home he sought a substitute, and finally made a mixture of paraffin, oil of amber and amber resin. This was applied hot, serving as a firm poultice. "Years later, he went on service to a railway in China and was in Yunnan at the time of the incendiary insurrection, and many badly burned Chinese were brought in for treatment. Remembering that Ambroise Paré treated such cases with hot oil, he tried the effect of covering the burn with his melted ambrine which at once glazes over, forming a coat impervious to the air, and his patients ceased to suffer."[2]



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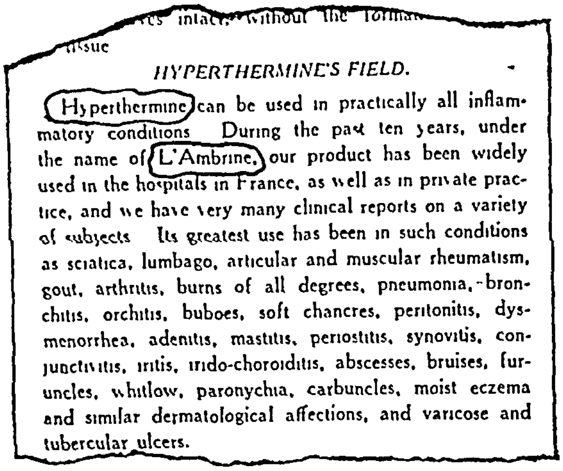
HYPERTHERMALITY A REALITY.

Hyperthermality is a fact, however, through the agency of a keri-resinous product which has been used in France since 1900 under the name of L'Ambrine. Hyperthermine, as the remedial agent will be known in this country, is a combination of several kinds of waxes and resins, scientifically blended and containing no medicinal elements whatever It comes in the form of waxy flakes It melts at 124° and on cooling resembles a dark colored wax.

Hyperthermine is the discovery of Dr Barthe de Sandfort, an eminent retired French naval surgeon and a member of numerous foreign medical societies He

"Ambrine" has been exploited in the United States for some time. To physicians it was sold under the name "Hyperthermine" Above is a photographic reproduction (reduced) of a portion of a booklet describing "Hyperthermine," which has been in The Journal office for some years

"Ambrine" has been sold in America under two names: "Hyperthermine," as exploited to physicians, and "Thermozine," as advertised to the public. Physical comparison alone shows that Ambrine as now sold differs from "Hyperthermine" of a few years ago; the probable reason is that "Ambrine" has changed its formula. This is borne out by Matas,[3] who states that de Sandfort "admitted that Ambrine was a compound of paraffin, oil of sesame and resins, but was not at liberty to divulge its exact composition, as the formula and manufacture of this substance was now the property of a private corporation which was exploiting it as a proprietary and secret remedy." The later formula differs from the original.



es intact, without the forma

tissue

HYPERTHERMINE'S FIELD.

Hyperthermine can be used in practically all inflammatory conditions During the past ten years, under the name of L'Ambrine, our product has been widely used in the hospitals in France, as well as in private practice, and we have very many clinical reports on a variety of subjects Its greatest use has been in such conditions as sciatica, lumbago, articular and muscular rheumatism, gout, arthritis, burns of all degrees, pneumonia, bronchitis, orchitis, buboes, soft chancres, peritonitis, dysmenorrhea, adenitis, mastitis, periostitis, synovitis, conjunctivitis, iritis, irido-choroiditis, abscesses, bruises, furuncles, whitlow, paronychia, carbuncles, moist eczema and similar dermatological affections, and varicose and tubercular ulcers.

Photographic reproduction (reduced) from the "Hyperthermine" ("Ambrine") booklet recommending it for use in rheumatism, gout, pneumonia, buboes, dysmenorrhea, eczema, tuberculous ulcers, etc.

Besides the foregoing paraffin preparations, two others have recently been placed on the American market, "Parresine" (nonsecret) and "Mulene" (secret).

ANALYSIS OF AMBRINE

"Ambrine" comes in rectangular cakes, about 1½ inches wide, 6 inches long and ½ inch thick. It is moderately soft, but somewhat brittle at ordinary room temperature. A black substance is present which evidently settles out during the compounding, as in one side of the cake these particles can be clearly discerned by holding it up to the light; in the other side there are no suspended particles. When melted, the solution is not clear, and a sediment forms. The melting point (U. S P. method; see later) is 48.4 C. The plasticity and ductility[4] are 27 and 30.5, respectively. It is pliable and strong at body temperature. The saponification number and acid number are both very low, but a fatty oil is present. Tests indicated oil of sesame. Ninety-eight per cent. of "Ambrine" is soluble in ether; this soluble portion may be treated with low-boiling ligroin (petroleum ether), out of which, on standing, a black asphalt-like substance separates. Of the ether-insoluble substance, 65 per cent. is soluble in chloroform The remaining insoluble substance contains a small amount of silica and vegetable fiber. The paraffin obtained from "Ambrine" melted at 48.6 C. As a result of various experiments, it appears that the composition of "Ambrine" is essentially as follows:

Paraffin (M P 48.6 C)	97.0 per cent.
Fatty oil (sesame?)	1.5 per cent.
Asphalt like body	0.5 per cent.
Coloring matter, and undetermined	1.0 per cent.
	100.0

OTHER PROPRIETARY PARAFFIN FILMS

A cursory examination of "Mulene," manufactured by the Mulene Company, Pittsburgh, was also made. This appears to contain paraffin, beeswax, a fat-soluble red dye and considerable rosin. When heated carefully in a beaker, the rosin "sticks" to the bottom, and does not go into solution readily.[5]

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* A number of physicians are testing out various paraffin films clinically. Their reports will appear in The Journal in the near future. —Ed

[1] The Outlook, Jan 17, 1917, p 100

[2] Med Rec, New York, Jan 27, 1917, p 160

[3] Matas, Rudolph: Burns Treated with Paraffin Mixtures, New Orleans Med. and Surg. Jour., April, 1917, p. 681

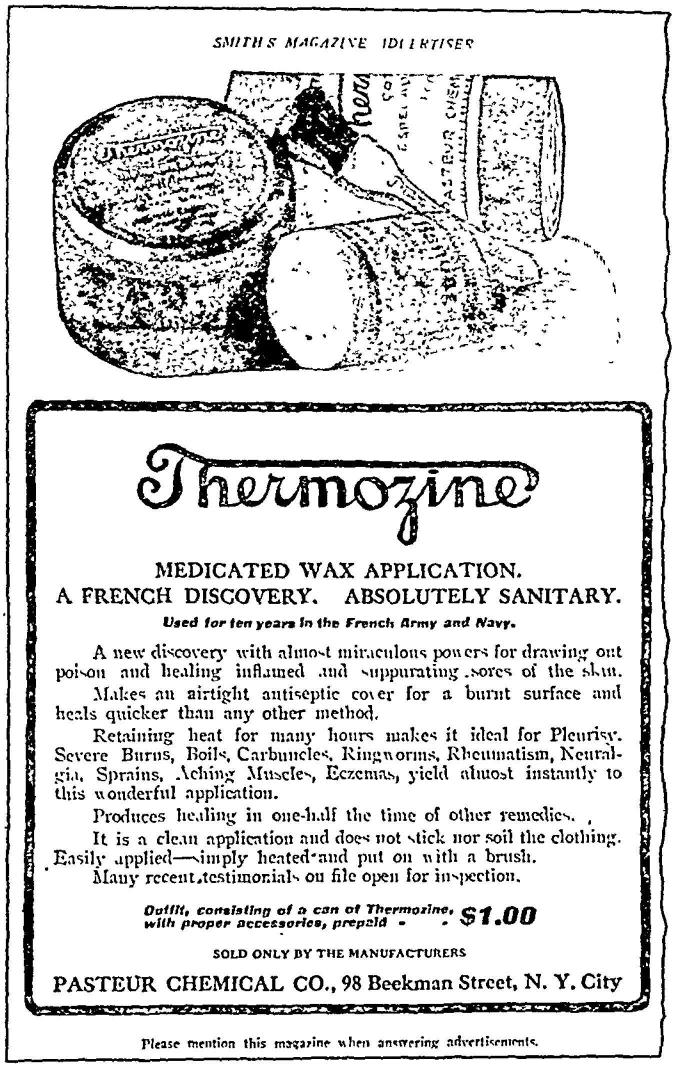
[4] These determinations will be described later.

[5] When the sample was first obtained, this feature was not observed.

"Parresine,"[6] according to the manufacturers, is a mixture composed of paraffin, 94 to 96 per cent.; gum elemi, 0.20 to 0.25 per cent.; Japan wax, 0.40 to 0.50 per cent.; asphalt, 0.20 to 0.25 per cent., and eucalyptol, 2 per cent., the whole being colored with alkannin and gentian violet.[7]

FORMULA FOR A PARAFFIN FILM

In a recent article, Sollmann[8] presented various suggestions for the compounding of paraffin films. Some of the formulas were promising and others were not, but all were simple. He did not try to imitate "Ambrine." Lieut.-Col. A. J. Hull[9] of the Royal Army Medical Corps, after experimenting with different combinations, concluded that a mixture of "1 part resorcin, 2 parts eucalyptus oil, 5 parts olive oil, 25 parts soft paraffin [petrolatum][10] and 67 parts hard paraffin" served the purpose as well as "Ambrine." The following formula, which might be called Asphalt-Paraffin No. 21, much more closely resembles "Ambrine," and it seems to have certain advantages, due to the use of a more suitable grade of paraffin:



SMITHS MAGAZINE ADVERTISER

Thermozine

MEDICATED WAX APPLICATION.
A FRENCH DISCOVERY. ABSOLUTELY SANITARY.

Used for ten years in the French Army and Navy.

A new discovery with almost miraculous powers for drawing out poison and healing inflamed and suppurating sores of the skin.

Makes an airtight antiseptic cover for a burnt surface and heals quicker than any other method.

Retaining heat for many hours makes it ideal for Pleurisy. Severe Burns, Boils, Carbuncles, Ringworms, Rheumatism, Neuralgia, Sprains, Aching Muscles, Eczemas, yield almost instantly to this wonderful application.

Produces healing in one-half the time of other remedies.

It is a clean application and does not stick nor soil the clothing. Easily applied—simply heated and put on with a brush.

Many recent testimonials on file open for inspection.

Outfit, consisting of a can of Thermozine, with proper accessories, prepaid - - **$1.00**

SOLD ONLY BY THE MANUFACTURERS

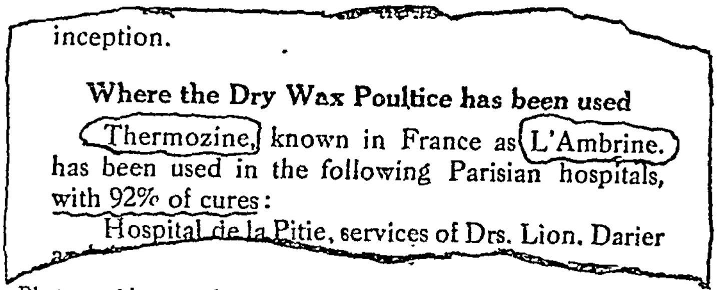
PASTEUR CHEMICAL CO., 98 Beekman Street, N. Y. City

Please mention this magazine when answering advertisements.

Photographic reproduction (greatly reduced) of a full page magazine advertisement of "Thermozine," the name under which "Ambrine" was sold to the public.

Paraffin[11] (M. P. by U. S. P. method 47.2 C.)	97.5 gm.
Asphalt	from 3 to 5 drops
Olive oil	1.5 c.c.

About 10 c.c. of "asphalt varnish". (B. Asphaltum)[12] is placed in a beaker and heated on the steam bath for one-half hour. From 3 to 5 drops, delivered from a 1 c.c. pipet, are then placed in a casserole, and 1.5 c.c. of olive oil added. The mixture is heated and stirred for a few minutes until perfect solution is effected. To this is then added, with stirring, the paraffin, which has been previously melted. When it is cooled, a brown solid is obtained.[13] The physical factors of this paraffin mixture are, melting point 45.4 C. (U. S. P. method); plasticity, 28.5; ductility, 29; it is very pliable and strong at 38 C., and adheres exceedingly well to the skin, although it detaches easily. This mixture, which is easy to prepare, is inexpensive, the cost of the materials being approximately 10 cents a pound.



inception.

Where the Dry Wax Poultice has been used

Thermozine, known in France as L'Ambrine, has been used in the following Parisian hospitals, with 92% of cures:

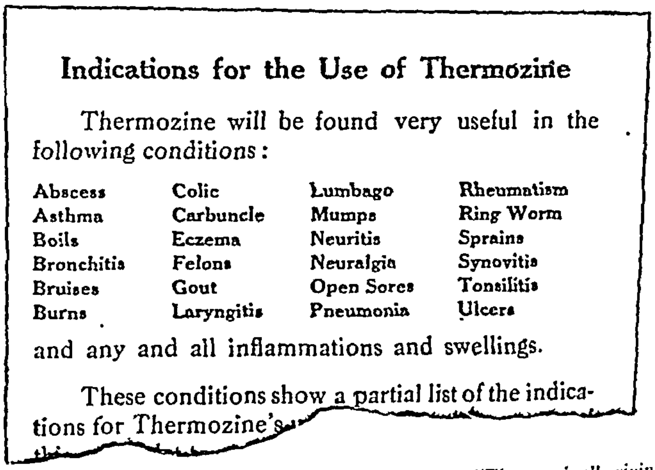
Hospital de la Pitie, services of Drs. Lion. Darier

Photographic reproduction from a booklet on "Thermozine" showing that it is identical with "Ambrine."

Both Hull and Sollmann noticed that tarlike substances and melted paraffin do not mix well. This is noticeable in "Ambrine," which cannot be called an "elegant" preparation. The difficulty may be overcome by first mixing hot olive oil and asphalt; the asphalt will then go into solution. It is interesting to note that the suggested formula (as well as others which were also prepared) is not as plastic as the paraffin itself.[14] This is also true of "Ambrine." On the other hand, the melting point of the paraffin is higher. *The important point, however, in compounding all paraffin preparations is to select a proper grade of paraffin as elaborated below.*

EXAMINATION OF PARAFFINS AND PARAFFIN PREPARATIONS

The name "paraffin" generally applies to a colorless and tasteless waxlike substance that is solid at ordinary temperature. It is composed of saturated hydrocarbons, that is, they are unable to take up any more hydrogen, and thereby are quite stable; the hydrocarbons in paraffin have the general formula of C_nH_{2n+2}, ranging as high as $C_{21}H_{70}$ to $C_{27}H_{56}$. Paraffin may be found in crude form in coal, from which source the first paraffin candles were made. It may



Indications for the Use of Thermozine

Thermozine will be found very useful in the following conditions:

Abscess
Asthma
Boils
Bronchitis
Bruises
Burns
Colic
Carbuncle
Eczema
Felons
Gout
Laryngitis
Lumbago
Mumps
Neuritis
Neuralgia
Open Sores
Pneumonia
Rheumatism
Ring Worm
Sprains
Synovitis
Tonsilitis
Ulcers

and any and all inflammations and swellings.

These conditions show a partial list of the indications for Thermozine's

Photographic reproduction from a booklet on "Thermozine" giving the conditions in which the stuff was alleged to be "very useful."

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[6] Made by the Abbott Laboratories, Chicago, and accepted by the Council on Pharmacy and Chemistry for New and Nonofficial Remedies, The Journal, May 12, 1917, p. 1406.

[7] No chemical examination was made.

[8] Sollmann, Torald: Suggested Formulas for Paraffin Films, The Journal A. M. A., April 7, 1917, p. 1037.

[9] Hull, A. J.: The Treatment of Burns by Paraffin, Brit. Med. Jour., Jan. 13, 1917, p. 37, The Treatment of Burns by Paraffin, Therapeutics, The Journal A. M. A., Feb. 3, 1917, p. 373.

[10] The "soft paraffin' 'of the British Pharmacopeia resembles petrolatum, U. S. P., Queries and Minor Notes, The Journal A. M. A., April 28, 1917, p. 1281.

[11] The paraffin used in this formula was supplied by the Standard Oil Company of Indiana; the melting point given by the manufacturers is from 120 to 122 F. which, according to the American Standard of taking melting points, gives higher results than the method described in the pharmacopeia.

[12] The "Asphalt Varnish" used was obtained from Remien and Kuhnert Company, Chicago.

[13] While needless, a color resembling "Ambrine" may be obtained by the addition of coloring agents.

[14] In a personal communication Dr. Sollmann expressed the opinion that the synthetic preparation is inferior to the paraffin used in the formula, basing the view on the greater plasticity of the paraffin. For practical purposes, the paraffin will most probably serve as well as the mixture, especially when it is held in place by bandages, but I believe that the mixture is more adhesive.

be produced from the distillation of brown coal, as in Germany, or from bituminous shale. In America, it is obtained chiefly from the distillation of crude petroleum, being in the residue after the distillation of such products as naphtha (gasoline), kerosene and the lubricating oils. The residue is treated by one of a number of processes causing the unpurified solid paraffin to be made available. The crude paraffin is either sold as such, or is refined. Paraffin or "paraffin waxes"[15] are designated in the trade by their melting points (which in the "American standard" is expressed in Fahrenheit degrees), and as to their state of refinement as "crude," "semirefined" and "fully refined" paraffin. There are certain chemical and physical differences so that two refined waxes having the same melting point would not have the same plasticity. The higher melting point varieties of paraffin are hard and tough at room temperature; when melted, paraffin expands and forms a thin, mobile liquid.

PARAFFINS AND PARAFFIN PREPARATIONS

Formula No.	Substance	Melting Point, U. S. P.	Ductility Limit	Plasticity Limit	(a) Adhesiveness and Detachability (b) Strength of Film at 38°
1	"Parowax," Stand. Oil Co. of Ind.	50.8	32.5	29.0	(a) Adheres and detaches well; rather hard (b) Pliable and strong
3	"Paraffin 118-120 F.," Stand. Oil Co. of Ind.	46.8	28.5	24.5	(a) Does not adhere well; detaches easily (b) Pliable but not strong
4	"Paraffin 120-122 F.," Stand. Oil Co. of Ind.	47.2	29.0	24.5	(a) Adheres well; detaches well (b) Pliable and fairly strong
5	"Paraffin 123-125 F.," Stand. Oil Co. of Ind.	48.8	31.5	28.5	Same as 4
6	"Paraffin 128-130 F.," Stand. Oil Co. of Ind.	52.0	33.0	30.0	(a) Adheres well; detaches not so easily (b) Pliable and strong
7	"Texwax," Texas Co., Port Arthur, Texas...........	51.2	32.5	29.8	Same as 6
8	"Paraffin Wax 122-124 F.," Warren Refining Co., Warren, Pa.	50.6	36.0	34-35	(a) Unsatisfactory; does not adhere (b) Only slightly pliable; too tough
9	"Paraffin No. 910," Waverly Oil Works, Pittsburgh...	47.0	30.5	26-27	(a) Adheres well; detaches well (b) Pliable and strong
10	"Paraffin No. 920," Waverly Oil Works, Pittsburgh...	44.4	27.5	25.0	(a) Adheres well; detaches well (b) Pliable and fairly strong
11	"Hard Paraffin," Rob't Stevenson & Co., Chicago....	48.0	28.5	24.5-25.5	(a) Adheres well; detaches well (b) Pliable and strong
12	"Paraffin," Island Petroleum Co., Chicago...........	47.2	33.0	32.5	Not quite as good as 11
13	"Paraffin 122 F.," Gulf Refining Co., Pittsburgh......	46.8	30.5	27.5-28	(a) Does not adhere so well; detaches well (b) Very pliable
14	"Paraffin 125 F.," Gulf Refining Co., Pittsburgh......	50.0	32.0	31.0	About as 13
15	"Paraffin 132 F.," Gulf Refining Co., Pittsburgh......	54.8	35.5	34.0	(a) Does not adhere well (b) Not very pliable, but strong
16	"Paraffin No. 301," National Refining Co., Cleveland..	50.2	33.0	32-32.5	(a) Does not adhere well (b) Not very pliable
18	Paraffin recovered from "Ambrine"..................	48.6	30.5	28-28.5	(a) Adheres well; detaches well (b) Pliable but not strong
19	"Hyperthermine"	49.4	33.5	30.5-31	(a) Does not adhere well; detaches well (b) Very pliable and strong
20	"Ambrine"	48.4	30.5	27.0	(a) Adheres well; detaches well (b) Very pliable and strong
21	Paraffin 120-122 F. (see 4), 97.5; olive oil, 1.5; asphalt, 4 drops	45.4	29.0	28.5	(a) Adheres excellently; detaches well (b) Very pliable and strong
22	"Parowax" (see 1), 97.5; olive oil, 1.5; asphalt, 4 drops	49.2	32.0	30.5	(a) Adheres well; detaches easily (b) Pliable and strong
23	"Mulene"	51.0	36.0	28.0	(a) Adheres but detaches with difficulty (b) Pliable but not strong
24	"Parresine," Abbott Laboratories, Chicago..........	46.0	29.5	26.0	(a) Adheres well; detaches easily (b) Pliable and fairly strong
25	"Paraffin 118-121 F.," The Atlantic Refining Co., Philadelphia	45.8	26.4	23.2	(a) Adheres well; detaches well (b) Pliable and fairly strong

The significant requirements of paraffin for surgical dressings are that it should be solid at body temperature, at the same time having flexibility and adhesiveness, together with a certain amount of strength. A number of brands of paraffin are sold in the United States, so that it seemed advisable to examine some of them and compare them with certain paraffin-film preparations. They were tested as to their melting points, plasticity, ductility, strength of film, etc.

Melting Point Determination.—The melting point was determined by the method of the U. S. Pharmacopeia IX, p. 596. The melting point as obtained by this method is lower than the melting point used by manufacturers of paraffin (after conversion to Fahrenheit).

Pliability and Ductility, Limit Temperature.[16]—A little of the melted wax was poured from a teaspoon on the surface of the water at about 40 C., in a tin pan (bread mold). This formed a fairly thin film. The temperature of the water was then lowered by the addition of cold water. At each temperature the pliability and ductility were tested thus:

Pliability Test.—The film, immersed in water, was doubled on itself, note being taken whether or not it broke.

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[15] Paraffin is sometimes spoken of as "white wax." This is unfortunate, as "white wax" is an official name for "White Beeswax, U. S. P." The term "white wax" is also often applied to "Chinese wax," which is formed from an insect living on the tree, Ligustrum lucidum.

[16] I am indebted to Dr. Torald Sollmann for these methods.

Ductility Test.—The film was pulled under water, note being taken whether it stretched on being pulled and broke with a ragged fracture; or whether it broke sharp without stretching. It is desirable that the pliability and ductility be preserved at as low a temperature as possible.

Cotton Films, Adhesives and Detachability.[16]—The melted wax was applied as it would be for burns; namely, a thin layer was painted on the inner surface of the forearm with a camel's hair brush,[17] a transverse strip about an inch wide being made. This was covered with a very thin layer of absorbent cotton, and over this another layer of melted wax was painted. As soon as this had cooled a little, it was covered by a few layers of bandage and left on for at least an hour. At the end of that time, the bandage was removed. The cotton film should be found at the place at which it was applied, showing that it is sufficiently adherent. It should detach without "pulling" the skin.

The results of these tests are given in the accompanying table. It can be seen that nearly all the paraffins examined have properties which would make them useful, the notable exceptions being Nos. 8, 15 and 16. The more satisfactory products would be those having a melting point about 47 C., ductility of 30 or below, and plasticity of 28 or below. The paraffin described in the U. S. Pharmacopeia is not so satisfactory, the required melting point being between 50 and 57 C.

Chaque famille devra toujours avoir chez elle un étui d'Ambrine pour calmer immédiatement et guérir rapidement les "Brûlures"

L'AMBRINE

étant d'un emploi très simple, chacun pourra l'appliquer; le pansement s'enlève très facilement sans la moindre douleur et sans causer d'arrachement. Dès qu'on aura recouvert la brûlure d'Ambrine, il se produira pendant quelques secondes une légère douleur, mais presqu'aussitôt toutes douleurs cesseront et le blessé ressentira un bien-être immédiat. Les tissus se réparent rapidement, et presque toujours sans laisser de cicatrices.

Photographic reproduction (greatly reduced) of the carton in which "Ambrine" is now sold.

The use of paraffin bandages has been suggested by Fisher[18] and Sollmann.[19] In such cases, it may very likely be that a paraffin of higher melting point would be more satisfactory, owing to its greater resistance and tougher fiber.

SUMMARY

1. "Ambrine" is essentially paraffin in which a small amount of fatty and asphalt-like body is incorporated; like most secret mixtures, its composition varies.
2. A simple formula for a paraffin film, similar in chemical composition but superior in physical properties to "Ambrine," is that described as Formula 21. The superiority is due to using a grade of paraffin that is better adapted to the purpose. The cost of materials is about 10 cents a pound.
3. The properties of the paraffin used for a surgical dressing are important. A number of different grades have been examined, in order to determine the ones that appear most promising. Paraffins Nos. 3, 4, 10, 11 and 25 are the best in the table, and surpass "Ambrine" itself.
4. It is exceedingly probable that further experience will show that for most purposes simple paraffin will serve just as well as the mixtures—if, indeed, not better.

Correspondence

ARGUMENTS AGAINST THE "STANDARD BILL" FOR COMPULSORY HEALTH INSURANCE

To the Editor:—We oppose the "standard bill" for compulsory health insurance:

1. Because it is un-American. Americanism means that the individual amounts to something; paternalism, that the individual is nonimportant but that the state is all important. Even a beneficent paternalism is harmful because it destroys individualism and discourages thrift.

2. Because it is not demanded by the employees, the employers, or by the physicians who will be compelled to work under its provisions. On the contrary, the employees as represented by organized labor; the employers as represented by the National Association of Manufacturers, the Real Estate Owners Association, the New York Chamber of Commerce, the Board of Trade and Transportation, and others; a combination of both employees and employers as represented by the National Civic Federation; the physicians as represented by the largest and about twenty other county medical societies in this state and the New York State Medical Society; the Chicago Medical Society, and even the Social Insurance Commission of the state of California have all gone on record as being squarely in opposition to the "standard bill"; and moreover, the Special Commission on Social Insurance of the state of Massachusetts reports that "the commission is therefore unanimous in not recommending any health insurance legislation for immediate passage," but it does recommend "an act to establish a state board of employment, printed in appendix . . . ."

3. Because we also "have an instinctive desire to see fair play," and it is not fair play to tax only the thrift of the wage earners and the employers in order to care for the misfortunes of a part of the population only.

4. Because I have learned during twenty-six years of active private practice among the wage earners that: (*a*) more is paid for "movies" and "rum" than is paid for medical attendance and treatment; (*b*) destitution is not all due to sickness—the loss per year due to sickness is much less than that due to voluntary and involuntary holidays; (*c*) the wage earner prefers to be free and independent and not tied down by identification cards, etc.; (*d*) he prefers to have a physician of his own choice to attend and treat him and his family and not have one forced on him by the insurance carrier, and (*e*) he prefers to pay his physician himself, and not through an insurance carrier.

5. Because only a very small part of the population is without needed medical care—so-called surveys made by medically unqualified and therefore incompetent persons to the contrary notwithstanding—and among those who can well afford to pay for proper and adequate medical attendance and treatment, many go entirely without, or depend on "home treatment" or on quack medicines.

6. Because the wage earners receiving in the neighborhood of $1,200 per year can and do receive proper and adequate medical care and treatment when they desire it; the hospitals are not the only places in which the sick can get good medical care, and most of the sick prefer to be treated at home. The man who can do only one thing well must not think all others can do only the same.

7. Because under all the schemes for compulsory health insurance as yet proposed, the persons most needing the insurance will not get it: those who are out of work, except on account of illness, longer than the extension of one week for each four weeks during the previous twenty-six weeks of paid up assessments; those who are unable to get into the voluntary insurance societies because they are unable to pass the medical examination, and those who are not insured because they are unable to get work on account of their age, alcoholism, shiftlessness, general incompetency, or any other disabling condition which prevents them from being employed. In times of financial distress or panic, these unfortunate conditions will be magnified many fold.

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[17] When painting a surface with a paraffin film, I found that the temperature of the paraffin should *not* be too close to the melting point, but several degrees above; otherwise it does not "set" well.

[18] Fisher, H. E.: Nonadhering Surgical Gauze, The Journal A. M. A., March 25, 1916, p. 939.

[19] Sollmann, Torald: Paraffin-Covered Bandages, The Journal A. M. A., April 21, 1917, p. 1178.

8. Because the employer, in order to keep his assessments low, will carefully choose his employees, selecting only the healthy and excluding the others by medical examinations, and therefore there will be a strong tendency to the formation of a large permanent pauper class.

9. Because, while the employer has a great responsibility for occupational diseases, it is unfair to compel him to pay 40 per cent. of the cost of the care and treatment of his employees suffering from sickness due to extrinsic causes—venereal diseases and even from injuries received while committing a misdemeanor or felony.

10. Because, if individual health is proved to be a state asset, then the state should pay the entire cost of the care of all the sick. It can be done better and more cheaply by directly paying the cost of the medical attendance and treatment of the sick, than by the complicated, cumbersome, topheavy, and dangerous scheme proposed under the "standard bill."

11. Because, under the proposed scheme, the insurance carrier has the choice of making the arrangements for the medical attendance and treatment of the sick wage earner either with the physicians on the panels, if there are any, or with salaried physicians; and either with or without free choice of the physician by the sick wage earner, and it is easy to foresee which the employers—for they will dominate the carriers—will choose: the salaried physicians, because they can get them more cheaply.

12. Because it is the universal experience in medical practice that contract work by the physician is uniformly detrimental to the development of good service and of science. The "standard bill" is simply an extension and legalization of the well known opprobrious and malodorous lodge practice.

13. Because under the foregoing conditions there will not be the same grade and quality of men who will enter the study and practice of medicine, and the public will suffer incomparably therefrom. On account of the low salaries paid by our government it is very difficult to get enough medical men for service in times of peace, and now that we are in a state of war it is necessary to appeal to patriotism in order to get enough medical men to care for our army and navy.

14. Because in the so-called "standard bill" the medical men have not a proper and adequate representation on the commission, council, and on all other boards having to do with medical matters. The "physician" on the commission may be one who has never practiced medicine; or he may have done so for a few years and then have given it up for a more congenial and lucrative business; or he may have practiced medicine among the very wealthy and have never come into contact with the persons who will come under the provisions of this measure except in hospitals and dispensaries. All of these will be out of touch and sympathy with both the sick wage earners and the physicians who will work among them.

15. Because under the provisions of the "standard bill" the physician will be compelled to hire himself out to the insurance carrier on the carrier's own terms, or he can and undoubtedly will have his practice almost or entirely taken away from him and given to one of the salaried physicians.

16. Because we must reason from premises which we can establish, and in New York State, the birthplace of the movement, and where the statistics have been worked out, the number of persons coming directly and indirectly under the provisions of the "standard bill" will be 73.42 per cent. of the entire population, and by adding the estimated number of paupers and improvident persons who will not be able to pay a physician—5 per cent.—there will be only 21.58 per cent. left for private practice.

17. Because with such a large part of the population joined together into societies or "funds" for their own pecuniary benefit, as the employees and employers would be under the "standard bill," it would be a dangerous thing for the state if they should be united as a political party under an unscrupulous boss. The rest of the state would be compelled to yield to them in everything.

18. Because the number of deaths per year in New York State among those directly insured will be 35 per cent. of 147,000, or 51,450, and at $100 per funeral the total amount paid to the undertakers per year will be $5,145,000.

Should the state subsidize the undertaking business?

EDEN V. DELPHEY, M.D., New York.
Chairman, Health Insurance Committee, Federation of Medical Economic Leagues.

A LITTLE MORE CONSERVATISM WITH THE TONSILS DESIRABLE

To the Editor:—Truly we are a race of hysterical extremists! We surge madly from the condition of license known as a "wide open town" to the puritanic restraint which follows the Billy Sunday type of religious campaign in the smaller community. We emerge from an era in which thrift was lauded as the greatest of the private virtues to a mad national extravagance which includes every class. We are either very "wet" or so dry that ginger ale and root beer are looked on askance. Either we are so peaceful that the author of "I Didn't Raise My Boy to Be a Soldier" is nearly canonized, or so warlike—in emotion, at least—that those of our legislators who wish to observe some system and economy in our going to war are candidates for lynching, a practice in itself which too well expresses the national impulsiveness. We have gone in for Christian Science, osteopathy, chiropractic, faith healing, fletcherism, Doan's Kidney Pills, electric belts, and every other wild idea that any seeker after publicity or pelf could promulgate.

Unfortunately this national trait too often works to discredit the efforts of earnest, sincere workers in scientific fields. In the etiology of rheumatism and other diseases, there can be no question of the importance of focal infection in the tonsils, about the teeth, and elsewhere. If there is a tendency on the part of some physicians to overwork this factor in obscure cases, it will be eliminated in the reaction, and the focal infection accorded its true importance as an etiologic factor. An unfortunate phase of the prominence given to this idea, however, is the effect on the lay mind. Our impetuous clients hear that "bad teeth and tonsils can cause rheumatism."

From that truth it is an easy step for them to the conclusion that teeth and tonsils are always the cause of all of those myriad symptoms which the layman refers to as "rheumatism." And equally easy is the conclusion that all tonsils are pathologic and should be removed, and they go, not to the internist for diagnosis and treatment of any so-called "rheumatic" condition, but to the laryngologist, and to him not for examination but avowedly for tonsillectomy. If, as one suspects sometimes happens, the laryngologist removes the tonsils on the patient's request without too close a scrutiny to determine whether or not there is a condition which really indicates the procedure, the ultimate result is easy to foresee. The operation will be discredited, and it will become difficult to persuade those really in need of it to undergo it. As a nation we seem incapable of exercising moderation, but the medical profession should carefully avoid being influenced by any therapeutic fads which the public seizes on.

CHARLES DARWIN ENFIELD, M.D., Jefferson, Iowa.

Philadelphia Large Drug Center.—The United States leads the world in the manufacture of drugs, and Philadelphia ranks first among the drug centers of the country according to Charles E. Hires, director of the Philadelphia Drug Exchange. The first chemicals manufactured in this country were made in Philadelphia by Christopher, Jr., and Charles Marshall, who began the manufacture of chemicals in 1789. The first morphin, quinin and strychnin were made in this city and the first drug mill in the country was established at the Falls of Schuylkill. The United States census for 1914 credited Philadelphia with twenty-two pharmaceutical and fifteen chemical plants. More than 20,000 people are employed and millions of dollars worth of the products are being shipped to foreign countries.

Dr. Robert Hellg [illegible]
E. M. C. Medical College 32516

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

SWINDLER WITH A HARD LUCK STORY

To the Editor:—Dr. Walter A. Landry of Chester, Pa., warned in a recent letter against a swindler who imposed on him—a man from 25 to 30 years of age, of dark complexion, about 5 feet 5 inches, about 130 pounds, thin and anemic, who speaks with a German accent. This description fits closely a swindler who imposed on me about six weeks ago. The only difference is that, I should say, my swindler could not be described as thin and anemic. He was about 5 feet 6 inches, weighing from 145 to 150 pounds, and spoke with a strong German accent. The game he worked on me was to claim relationship with people whom I knew in a neighboring city and with a well-known doctor of my acquaintance. He was suddenly stranded in Chicago and needed enough money to get home. He worked me for $10. The circumstances of his swindle would indicate that he was a rather ingenious swindler, who would be able to invent various schemes to suit different occasions.

One Ashamed to Sign His Name, Chicago.

ANOTHER CAUTION NOTE

To the Editor:—A young man of dark complexion, rather slim, who weighs about 135 pounds, is going through the country posing as a major of the French army, home on a furlough, showing scars on his body as proof of having been wounded. His idea is to get acquainted with influential business and professional men, and finally procure money on his personal check without any funds.

U. D. Seidel, M.D., Akron, Ohio.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Delaware: Dover and Wilmington, June 19-21. Sec., Dr. H. W. Briggs, 1026 Jackson St., Wilmington.

Florida, Regular: Palatka, June 19-20. Sec., Dr. E. W. Warren, Palatka.

Georgia: Atlanta and Augusta, May 31-June 2. Sec., Dr. C. T. Nolan, Marietta.

Illinois: Chicago, June 14-16. Sec., Dr. C. St. Clair Drake, Springfield.

Iowa: Iowa City, June 7-9. Sec., Dr. G. H. Sumner, Capitol Bldg., Des Moines.

Kansas: Topeka, June 19-21. Sec., Dr. H. A. Dykes, Lebanon.

Kentucky: Louisville, June 19-21. Sec., Dr. A. T. McCormack, Bowling Green.

Louisiana: New Orleans, June 7-9. Sec., Dr. J. A. Henderson, 921 Canal St., New Orleans.

Maryland: Baltimore, June 19. Sec., Dr. J. McP. Scott, 137 W. Washington St., Hagerstown.

Michigan: Ann Arbor, June 12-14. Sec., Dr. B. D. Harison, 504 Washington Arcade, Detroit.

Minnesota: Minneapolis, June 5-8. Sec., Dr. Thomas S. McDavitt, Lowry Bldg., St. Paul.

Mississippi: Jackson, June 19-20. Sec., Dr. W. S. Leathers, Oxford.

Missouri: St. Louis, June 18. Sec., Dr. J. A. B. Adcock, Jefferson City.

Nebraska: Lincoln, May 31-June 1, Sec., Dr. E. Arthur Carr, 516 Banker's Life Bldg., Lincoln.

New Hampshire: Concord, June 25-26. Sec., Dr. W. T. Crosby, Beacon Bldg., Manchester.

New Jersey: Trenton, June 19-20. Sec., Dr. Alexander MacAlister, 438 East State St., Trenton.

New York: Albany, Buffalo, New York, and Syracuse, May 22 25. Sec., W. J. Denno, Education Bldg., Albany.

North Carolina: Raleigh, June 19. Sec., Dr. H. A. Royster, 423 Fayetteville St., Raleigh.

Ohio: Columbus, June 11-14. Sec., Dr. George H. Matson, State House, Columbus.

Oregon: Portland, June 5. Sec., Dr. Herbert S. Nichols, Corbett Bldg., Portland.

South Carolina: Columbia, June 12. Sec , Dr. A. Earle Boozer, 1806 Hampton St., Columbia.

Tennessee: Knoxville, Memphis and Nashville, June 15-16. Sec., Dr. A. B. De Loach, Scimitar Bldg., Memphis.

Texas: Austin, June 19-21. Sec., Dr. M. F. Bettencourt, Mart.

Virginia: Richmond, June 19-22. Sec., Dr. J. W. Preston, 215 S. Jefferson St., Roanoke.

Wisconsin: Milwaukee, June 26. Sec., Dr. J. M. Dodd, 220 E. 2nd St., Ashland.

Chiropractic Bill in Hawaii Vetoed

A bill to legalize chiropractic passed the Hawaiian Territorial Legislature recently but was vetoed by Governor Pinkham, who explained his veto in part as follows:

First, it (the chiropractic bill) conflicts with the laws heretofore enacted and now on the statute books for the protection of public health, for which public health the legislature has appropriated in the past and is now appropriating great sums of money.

Second, the law already provides ample means and avenues for special practice, hence whatever benefit may accrue to human beings by any special practice is now available to whomsoever elects.

In its exactions the (medical practice) law has laid its hand heavily on those professionally concerned in the diagnosis and treatment of disease and in the practice of surgery. It has compelled them to submit to a searching examination as to their qualifications and their ability to comply with the law, and their practice, after admission, is strictly controlled by law.

Included among licensed practitioners are those who specialize, but they do not demand or request, nor does the law concede them legal recognition based on their ability to specialize, for these thoroughly equipped men are aware that, if a practitioner is not qualified to diagnose the range of general disease and the specifically legally listed diseases, such practitioner is dangerous to public health and public finance, as our past epidemic expenditures strikingly illustrate.

Other classes of specialists have arisen, and others will arise, who demand almost complete immunity from thorough, comprehensive education and experience. They demand absolute exemption from official examination as to their knowledge of and experience with disease. They demand the utmost unrestricted freedom in spite of their acknowledged limitations and definite inexperience, to decide for themselves.

No school can comply with the law unless its education has been comprehensive. Chiropractic is deficient in the essentials, hence seeks special immunities, which I cannot see my way to approve.

Kansas February Report

Dr. H. A. Dykes, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination held at Topeka, Feb. 13, 1917. The total number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 75. The total number of candidates examined was 7, of whom 2 passed, and 5 failed, including 2 osteopaths. Seven candidates were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Tulane University of Louisiana	(1916)	91
Jefferson Medical College of Philadelphia	(1916)	90
FAILED		
University of West Tennessee	(1915) 64; (1916)	74
McGill University	(1897)	63

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
American College of Medicine and Surgery	(1903)	Arkansas
State University of Iowa College of Medicine	(1889)	Iowa
State University of Iowa Coll. of Homeo. Med.	(1890)	Iowa
Coll. of P. and S., Kansas City, Kan.	(1901)	Missouri
Central Medical College of St. Joseph	(1900)	Missouri
Marion-Sims College of Medicine	(1899)	Oklahoma
National University of Arts and Sciences	(1915)	Missouri

Kentucky Reciprocity Report

Dr. A. T. McCormack, secretary of the State Board of Health of Kentucky, reports that the following candidates were licensed through reciprocity from Jan. 1 to March 7, 1917:

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Meharry Medical College	(1902)	Iowa
Universities of Nashville and Tennessee	(1911)	New Mexico

Pennsylvania Reciprocity Report

Mr. N. C. Schaeffer, secretary of the Pennsylvania Bureau of Medical Education and Licensure, reports that 4 candidates were licensed through reciprocity from Jan. 4 to Jan. 29, 1917:

College LICENSED THROUGH RECIPROCITY	Year Grad.	Reciprocity with
Howard University	(1909)	Virginia
Johns Hopkins University	(1897)	Maryland
Hahnemann Med. Coll. and Hospital of Phila.	(1913)	New Jersey
University College of Medicine	(1909)	W. Virginia

Medicolegal

City Not Liable for Death Attributed to Stagnant Water

(Bruggeman et al. vs. City of York (Pa.), 98 Atl. R. 970)

The Supreme Court of Pennsylvania, in affirming a judgment of compulsory nonsuit, say that the plaintiffs sued to recover damages from the city of York for the death of their 9 year old son, alleged to have been due to disease contracted from a stagnant pool of water which the municipality permitted to collect and remain on the street in front of the plaintiffs' residence. The nonsuit was entered by the court below on the ground of insufficiency of proof to show that death was caused by the alleged negligence of the defendant. The municipality had constructed a fire engine house opposite the plaintiffs' residence, and in the course of the work raised the grade of the lot on which the building was erected, and in so doing caused water which formerly passed over its surface to collect in front of the plaintiff's dwelling and remain there and collect drainage water and filth of various kinds and become stagnant. On occasions of heavy rains the pool formed by the filling done by the city would overflow, causing the stagnant water to flow into the cellar of the plaintiffs' house, making it damp and musty. One Sunday the plaintiffs' son played in the cellar the greater part of the day. The following Tuesday, after returning from school in the afternoon, he assisted his mother in cleaning the gutter of the street in front of their home. The odor arising from the gutter while being cleaned was very offensive. That evening the boy complained of not feeling well and ate but little supper, and during the following day had little or no appetite. On Thursday he complained of stomach trouble and headache, and on Friday remained home from school in the afternoon. He continued in this condition until the following Sunday, when the family physician was called, who found him suffering from pneumonia, from which disease the boy died on the following Tuesday. The physician testified that when he first saw the boy on Sunday he was in an anemic condition resulting, in his opinion, from impure air, and because of this condition was unable to resist the attack of pneumonia which followed. Two physicians testified on behalf of the plaintiffs, and both said that in their opinion the death of the boy was the result of his insanitary surroundings. But, in view of other testimony, the court holds that a verdict for the plaintiffs would be the result of mere conjecture on the part of the jurors, based on an inference selected from a number of equally probable inferences, in other words, a mere guess as to the precise cause of the disease, and that the trial court was right in declining to submit the cause to a jury and in entering a compulsory nonsuit. It was not enough for the plaintiffs to show that the injury complained of was due to one of two or more possible causes if the defendant was responsible for but one of them. They must go farther and show that the latter cause was the proximate one from which the injury followed as the natural and probable result, and that the succession of events leading up to the injury were linked together as a natural whole without intermediate cause not attributable to the defendant's wrongful act.

Not Privileged

(Kelly vs. Dykes et al. (N. Y.), 161 N. Y. Supp. 551)

The Supreme Court of New York, Appellate Division, First Department, in reversing a judgment obtained by the plaintiff in this personal injury case, says that a claim of error was predicated on a refusal of the trial court to permit the defendants to interrogate a physician on whom the plaintiff had called a few days before the trial. The defendants sought to show, and if permitted might have been able to show, that this visit and the conversation which ensued had nothing to do with any medical treatment, but was only as to the testimony the physician would give if called as a witness. To this extent, at least, the defendants should have been allowed to go, for it is not every conversation with a physician which is protected by statute.

Society Proceedings

COMING MEETINGS

American Medical Association, New York, June 4-8.

American Academy of Medicine, New York, June 4-5.
American Association of Anesthetists, New York, June 2.
Am. Assn. of Genito-Urinary Surgeons, Rochester, Minn., May 21-23.
Am. Climatological and Clin. Association, Lakewood, N. J., May 29-31.
American Dermatological Association, Cincinnati, May 24-26.
American Gynecological Society, Pittsburgh, May 31-June 2.
American Laryngological Association, Atlantic City, May 28-30.
Am. Laryn., Rhin. and Otol. Society, Niagara Falls, Can., June 1-2.
Am. Medico-Psychological Association, New York, May 29-June 1.
American Neurological Association, Boston, May 21-23.
Am. Ophthalmological Society, Virginia Hot Springs, May 29-30.
American Orthopedic Association, Pittsburgh, May 31-June 1.
American Otological Society, Atlantic City, May 29-30.
American Pediatric Society, White Sulphur Springs, May 28-30.
American Proctologic Society, New York, June 4-5.
American Psychopathological Association, Boston, May 24.
American Radium Society, New York, June 4.
American Society of Tropical Medicine, New York, June 4-5.
American Surgical Association, Boston, May 31-June 2.
American Therapeutic Society, New York, June 1-2.
Conference of State & Prov. Bds. of N. Amer., Washington, May 30-31.
Connecticut State Medical Society, New Haven, May 23-24.
Florida Medical Association, Atlantic Beach, May 18-19.
Maine Medical Association, Portland, June 12-13.
Massachusetts Medical Society, Boston, June 12-13.
National Assn. for the Study of Epilepsy, Skillman, N. J., May 28-29.
Oregon State Medical Association, Portland, June 28-30.
Rhode Island Medical Society, Providence, May 31.
South Dakota State Medical Association, Yankton, May 28-30.
Washington State Medical Association, Spokane, June 17-19.

AMERICAN ASSOCIATION OF IMMUNOLOGISTS

Fourth Annual Meeting, held at New York, April 6-7, 1917

The President, Dr. Richard Weil, in the Chair

Treatment of Dermatitis Venenata by Vaccines

Dr. Albert Strickler, Philadelphia: I undertook this study with the object of throwing some light on a number of factors relative to dermatitis venenata: (1) the elaboration of an endermic skin test; (2) the determination of a possible influence of an intramuscular injection of homologous vegetable toxins; (3) possible desensitization of individuals by injection of homologous vegetable toxins; determination of complement fixing bodies (if existing) in serums of patients who had had an attack and had been treated by injection of homologous vegetable toxins. Toxins of ivy, sumac and nettle were isolated and employed. Twelve patients were studied, with the following impressions: 1. Intramuscular injection of the toxins of these poisonous plants has an influence on the course of dermatitis venenata. 2. This is not advocated as a routine procedure, except in severe cases. 3. The immunity is probably a tissue immunity, transient in character. 4. It is possible to develop a skin test in this condition, and also to desensitize individuals against plant poisoning. 5. Complement fixation is apparently absent in dermatitis venenata.

DISCUSSION

Dr. A. P. Hitchens, Glenolden, Pa.: Some years ago Dr. Frod studied the substance in *Rhus toxicodendron* responsible for the dermatitis. An antirhus serum was produced in horses. In patients in whom this was applied locally, the rash disappeared over night. This seemed to show an immunity reaction in the horses. "Toxin" was hardly the correct word to describe these extracts.

Dr. A. F. Coca, New York: I think Dr. Hitchens is correct in saying that this is not a "toxin." The condition depends on the sensitiveness of the individual, just as to pollen, or any other protein. The resistance after treatment is not immunity, but desensitization, as in recovery from hay-fever. No antibodies are formed in so short a time. Application of the antigen into the body fluids differs from local external application. I would ask whether these persons showed positive skin tests after the treatment. Dr. Cooke finds they are still positive after successful pollen treatment, but the ophthalmic test is negative.

Dr. J. Head: Is the injection attended with any soreness?

Dr. A. Strickler, Philadelphia: When the test is made with small doses, there is no soreness; when with large doses, there is considerable soreness. I have not done the skin reaction after the treatment. I think it is a very good suggestion.

The Epidemiology of Bacillary Dysentery

Dr. W. G. Smillie, Boston: I reported the results of a series of studies conducted by the Floating Hospital of Boston, in 1916, to discover the points of origin of infection in cases of bacillary dysentery, and the means of transmission. Cases were studied as regards temperature, humidity, neighborhood conditions, family conditions, source of infection. 1. The incidence seemed to follow the fly curve more closely than the temperature curve. 2. Poor housing conditions were a fertile source of infection. 3. Breast fed infants of foreign parents escaped more than American children. 4. Sources of infection were: contact with an acute case or carrier; contact with a house case; condensed milk; ice cream; flies; milk; water; fruit. Results in infants from contact with mild adult cases were often fatal. As a rule, the older the children, the milder the disease.

Some of the Conclusions Drawn from a Comparative Study of Different Methods of Performing the Wassermann Reaction

Drs. J. Bronfenbrenner and M. J. Schlesinger, Pittsburgh: There is as yet no absolute method for standardization of the Wassermann reaction. Discrepancies occur in different laboratories between the clinician and the serologist. The clinician does not take sufficient care to secure uniform conditions, or supply an adequate history. There are also many serologists who are incapable of controlling their own tests. Methods differ in delicacy. Serum should be fresh and not inactivated, and antigen protein free. The procedure of preference makes use of fresh unheated serum. The complement of the serum is titrated and utilized in the test, guinea-pig complement being added when necessary. We use reprecipitated acetone-insoluble lipoids of which one-tenth the anticomplementary dose still contains from ten to 100 antigenic units. The antihuman hemolytic system is used and the erythrocytes are sensitized before being added to detect the presence of free complement. Incubation for fixation of complement is best performed for thirty minutes at 37 C. in the water bath. However, one can use ice-box incubation for from ten to fifteen hours as a presumptive test to eliminate the negative serums, and 37 C. incubation for five minutes to eliminate the strongly positive serums. For diagnosis, however, one-half hour incubation at 37 C. is the best.

DISCUSSION

Dr. Hans Zinsser, New York: I agree that fresh serum is absolutely necessary, but I do not think that it is a good plan to work with unheated serum.

Dr. J. A. Kolmer, Philadelphia: I agree that crude alcoholic extracts of tissues, with or without the addition of cholesterol, should not be used in conducting the syphilis reaction with active serum, as in Noguchi's test and that of Hecht-Gradwohl. A suitable insoluble lipoid extract serves best as antigen and yields less nonspecific reactions.

Dr. Richard Weil, New York: It is a fallacy for the serologist to assume the clinical history as a guide. He should not need the history as proof of the disease. The serologist must report the reaction as he finds it, without reference to the clinician.

Dr. J. Bronfenbrenner, Pittsburgh: An essential point is that in the preparation of Noguchi's antigen, the cholesterol is removed, and this makes the sample of antigen less anticomplementary. To Dr. Weil I would say that the only way for a serologist to standardize his reagents is to do so with a known syphilitic serum on hand. A good and complete history must be obtained, but the serologist should not attempt to make a diagnosis. His duty is to report the reaction. Many doubtful reactions, however, could be better understood if a proper history were available.

An Antigenic Classification of the Group IV Pneumococci

Miss Miriam P. Olmstead, New York: A study of the Type IV pneumococci, which have been considered a heterogeneous series of independent strains, was undertaken at the Presbyterian Hospital in connection with an investigation of postoperative pneumonia, in which the Type IV pneumococci have been found to be an important etiologic factor. Agglutination has been used for differentiating the strains, confirmed by a few absorption experiments and complement fixation tests. Thirty-seven immune serums have been used and ninety-four cultures have been grouped. Forty-six from normal mouths, forty-eight from other sources. Not all cultures have been tested against all serums, but enough tests have been performed to demonstrate twelve distinct groups, the members of which crossagglutinate with each other but not with other groups. The groups contain from two to seventeen strains each, many apparently identical, but some divided into subgroups, evidenced by nonreversible reactions. A few strains are slightly and irregularly agglutinated by Type II serums, but according to agglutination and complement fixation reactions are much more closely related to Type IV strains. These may be considered connecting links between Type II and Type IV, but should be classified as Pneumococcus IV rather than II.

DISCUSSION

Dr. Rufus I. Cole, New York: I would ask Miss Olmstead whether she has tried dilutions of these serums, and also if she finds that the organisms are typical. The study of these types of organisms is going to be interesting work from an immunologic standpoint. It will be interesting to discover whether or not persons closely associated with each other carry organisms of these nonpathogenic groups. It remains to be shown whether these atypical kinds tend to become more fixed and whether their occurrence ever produces epidemics. In South Africa the type that causes the disease most frequently is not the kind we usually have.

Dr. Richard Weil, New York: I would like to know whether or not the absorption tests followed an absolute parallel with the agglutination tests. Do the different known agglutinating strains show any capacity whatever for absorption?

Miss Miriam P. Olmstead, New York: The strains within any group agglutinated each other 1:80 or 1:160. In some groups there were subgroups, the type serums agglutinating all strains in the same dilutions, but the serums of the subgroup not agglutinating the type strains. The strains agglutinated by both II and IV serums were agglutinated very slightly by II, 1:2, or 1:10 only. In many instances, no agglutination was noticeable until the tests had stood in the ice-box over night. One of the strains that I considered Group IV was also tested at the Rockefeller Institute and called Group IV, while a strain agglutinated slightly by II serum and strongly by the IV serum was called II-x. Few absorption tests have been done, but those few paralleled the agglutination tests.

Complement Fixation Studies on the Group of Acid Fast Bacteria

Dr. Jean V. Cooke, San Francisco: Cross fixation tests, with varying amount of immune rabbit serums and a number of both pathogenic and nonpathogenic acid fast bacteria as antigens, gave the following results: 1. Immune serums which will give fixation in amounts varying from 0.004 to 0.0002 c.c. can be obtained with any of the acid fast bacteria. 2. There is a group fixation reaction in which all members of the group participate when 0.1 c.c. of immune serum is used. With serums of very high titer, all organisms will react with 0.01 c.c. of serum. As smaller amounts of serum are employed, various members of the group fail to give fixation until near the titer limit there is usually a small group which still reacts. These groups are not always sharply defined. 3. The immune substances are still present and can be detected in serums for more than three years.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopedic Surgery, Boston

April, XV, No. 4

1 Scoliosis. Treatment. E. G. Abbott, Portland, Me.—p. 243.
2 Use of Autogenous Bone Graft Pin in Treatment of Painful Flat Foot, Paralytic Valgus, etc. R. E. Soule, New York.—p. 292.
3 *Relation of Blood Supply to Longitudinal Growth of Bone. S. L. Haas, San Francisco.—p. 305.
4 *Giant Cell Sarcoma and Benign Cysts of Bone; Report of Cases. A. R. Kimpton, Boston.—p. 317.
5 Portable Plaster Apparatus. A. O'Reilly, St. Louis.—p. 324.

3. Blood Supply and Longitudinal Bone Growth.—The practical lesson to be derived from Haas' investigation is to caution surgeons to exercise care to preserve the blood supply to the epiphysis when performing any extensive operations on actively growing bones, especially, if the greatest amount of growth takes place from that particular epiphyseal line.

4. Giant Cell Sarcoma and Benign Cysts of Bone.—Following a slight injury, one of Kimpton's patients, a girl, 5 years of age, sustained a "green stick" fracture of the upper end of the right tibia. Nothing abnormal about the leg had been noted previous to injury. Swelling began about the time of the fracture. There was no pain. Thirteen months later operation showed that the growth was a solid tumor of soft, granular, whitish material, divided into sections by fibrous tissue. There was a small amount of fluid, probably edema. The tumor was removed by curetting, the cavity wiped out with phenol and alcohol, and then packed with dry sterile gauze. Pathologic report: "giant cell sarcoma." Two years later a return was noted. Curetting repeated. No return after four years. A second patient, a girl, 15 years of age, sustained an injury to her hand, while playing in the gymnasium. A diagnosis of fracture was made, and the Roentgen ray showed not only fracture but probable bone cyst. The patient refused operation. One year later a resection was done. Nine months after this there was a recurrence, Kimpton again operated and since then there has been no recurrence. At both operations the tumor consisted of a shell of bone filled with dark brown fluid, which was under pressure. Pathologic report: "giant cell sarcoma." A recent report shows the patient to be perfectly well.

Archives of Internal Medicine, Chicago

April, XIX, No. 4

6 *Effect of Muscular Work, Diet and Hemolysis on Serum Proteins. A. H. Rowe, Oakland, Calif.—p. 499.
7 *Causes of Variation in Concentration of Urea in Blood of Young Healthy Adults. T. Addis and C. K. Watanabe, San Francisco. —p. 507.
8 *Autotransplantation and Homotransplantation of Thyroid, Using Thyroid Capsule as Seat of Transplantation. J. H. Hess and A. A. Strauss, Chicago.—p. 518.
9 *Effect of Salicylates on Experimental Arthritis in Rabbits. B. Fantus, W. E. Simmonds and J. J. Moore, Chicago.—p. 529.
10 *Roentgenography of Lungs. Roentgenographic Studies in Living Animals After Intratracheal Injection of Iodoform Emulsion. C. A. Waters, S. Bayne-Jones, Baltimore, and L. G. Rowntree, Minneapolis.—p. 538.
11 *Case of Infundibular Tumor in Child, Causing Diabetes Insipidus with Tolerance of Alcohol. L. Newmark, San Francisco.—p. 550.
12 *Reactivated Thymus; Report of Case of Thymic Myasthenia. G. H. Hoxie, Kansas City, Mo.—p. 564.
13 *Diastatic Activity of Urine and Feces with Special Reference to Diseases of Pancreas. C. W. McClure and J. H. Pratt, Boston. —p. 568.
14 *Suprarenal System and Carbohydrate Metabolism. G. M. Mackenzie, New York.—p. 593.
15 *Study of Ethylhydrocuprein (Optochin) in Treatment of Acute Lobar Pneumonia. H. F. Moore and A. M. Chesney, New York. —p. 611.

6. Effect of Muscular Work, Diet., etc., on Serum Proteins.—Rowe's investigations on this effect of work on serum proteins in normal men show a very decided increase in the total proteins, which increase occurs more in the albumin than in the globulin fraction. The nonproteins increase very slightly. The work done was on a bicycle ergometer to a point where the subjects were near exhaustion, except one instance in which increase in proteins due to merely walking around the laboratory is shown. An immediate effect of diet on serum proteins is practically wanting, while a high protein diet continued for several days produces a slight increase in the serum proteins. The percentage of globulin seems to be slightly increased in cases in which healing of fractures or operative incisions is occurring and in which no signs of infection are present. Serum proteins undergo no marked changes after the serum has been kept on ice for forty-eight hours. Hemolysis, when excessive, definitely increases serum concentration, while slight hemolysis produces only a very slight increase. A few suggestions about the technic and use of Robertson's microrefractometric method are given.

7. Concentration of Urea in Blood.—Differences in diet are held by Addis and Watanabe to be a cause of variation in the concentration of urea in the blood of normal persons. On a constant diet a variation of from 0.0156 to 0.0438 gm. urea per hundred cubic centimeters of blood was found in twenty-nine experiments on twenty-five normal persons. Differences in the rate of protein catabolism are the principal cause of the variation which was found in the blood urea concentration of normal persons on a constant diet. The blood urea concentration of normal persons is not maintained at a constant level by a proportionate increase in the rate of excretion of urea from the blood by the kidneys, whenever there is an increase in the rate of entrance of urea from the tissues into the blood. Under inconstant conditions variation in blood urea concentration may be caused by alterations in the activity of the kidneys. Permanent individual peculiarities play no part as a cause of variation in the blood urea concentration of different normal persons. In a group of twenty-two subjects a variation of from 0.0225 to 0.06 gm. urea per hundred cubic centimeters of blood was found in a series of 106 estimations, carried out in the morning before breakfast. Practically the same degree of variation was shown by one of these subjects, on whom fifty estimations were made.

8. Thyroid Autotransplantation.—Having under their care a large number of cretins in whom cessation of thyroid feeding leads rapidly to a recurrence of myxedema with its train of symptoms, Hess and Strauss were led to undertake experimental work on autotransplantation and homotransplantation of the thyroid. Autotransplantation of the thyroid into the thyroid capsule was successful in all cases. The authors believe that there should be a minimum disturbance of the blood supply in the region in which the transplant is placed, and that foreign bodies, such as suture material, should not come into contact with the transplant. The varying degree to which a homotransplant takes depends on the amount of reaction between the host and the tissue transplanted. A familial relationship and probably the early age of the animals on which operation was performed were important factors in the results.

9. Salicylates in Arthritis.—The results of the experiments reported by Fantus and his associates indicate that in the experimentally induced arthritis of rabbits salicylates are not only worthless, but even harmful. Sodium salicylate, when used in a dose comparatively harmless to animal controls, was decidedly detrimental and liable to be fatal to animals infected with the hemolytic streptococcus. The addition of sodium bicarbonate does not lessen much the harmfulness of the salicylate to infected rabbits. Sodium bicarbonate given alone is not injurious to infected rabbits, neither does it produce a noticeable improvement. Acetylsalicylic acid, in equivalent dosage, appears to be much more toxic to normal rabbits than is sodium salicylate, and is harmful to infected rabbits as well. Salophen has either no influence or an unfavorable one on the course of the infection.

10. Roentgenography of Lungs.—A 10 per cent. suspension of iodoform in olive oil was injected into the lungs for purposes of roentgenography with most satisfactory results. Experiments were made with solution of thorium. The shadows cast by this fluid in the air passages were too faint and diffuse for practical value. The fluid also seemed more toxic than the iodoform emulsion. When the lungs were dissected after an intratracheal injection of iodoform oil, this material, apparently in the same degree of suspension, was found in the bronchi, bronchioles and smallest air passages.

The mortality among the animals injected appears to be approximately 25 per cent., or three out of thirteen. The type of lesion in the lungs of the dogs whose death was considered to be due ultimately to the injected emulsion, was that of a proliferative bronchopneumonia. As similar suspensions of iodoform in oil have been used in the local therapy of human pulmonary diseases, it is hoped that perfection of the method may ultimately permit its application to man. This preliminary study is the basis of the belief of the authors that by such a method it may become possible to define with precision many roentgenographic shadows which are at present largely data for speculation.

11. **Infundibular Tumor.**—An account is given by Newmark of a boy who died at 14 years after having had diabetes insipidus continuously for about five years. Signs of a tumor appeared only about two weeks before death. A craving for alcoholic drink and unusual tolerance of it are recorded. A tumor occupying the region of the infundibulum, extending forward through the lamina terminalis, between the frontal lobes, and backward into the third ventricle and destroying the neurohypophysis and most of the pars intermedia, accounted for the diabetes insipidus. There was also atrophy of the pineal body. A survey of the literature confirms the view that a tumor causing diabetes insipidus is commonly situated in, or near, the neurohypophysis, but occasionally in the pineal body. It does not appear from clinico-pathologic observations that it is overproduction of a diuretic substance that causes diabetes insipidus.

12. **Reactivated Thymus.**—Hoxie's patient, first seen at the age of 19, had been suffering for two years from shortness of breath. He had measles as a child; no other diseases except a headache about three to five times a year since 10 years of age. The patient vomited at the end of each attack. Formerly he was the "fattest" one in the family, but was now thin. Sleep was poor on account of a "stretching of the diaphragm"—evidently a feeling of constriction. The only important physical finding was increased submanubrial dulness. The roentgenogram of the chest showed an enlarged shadow in this area. The manubrium was resected and some pieces of thymus removed. The microscopic study of these showed the epithelialization described by Matti and Klose as characteristic of the reactivation of the adult thymus.

13. **Diastatic Activity of Urine.**—The results reported by various authors, not only in experimental pancreatic lesions in animals, but in pancreatic disease in man, led McClure and Pratt to the present study. The method employed to estimate diastatic activity was one devised by Wohlgemuth. The authors studied the diastatic activity of the urine in twenty-two healthy adults and in 108 hospital patients. These patients were without evidences of pancreatic disease or diabetes mellitus. The conclusions arrived at, in part, are: The estimation of the diastatic activity of the urine is of very slight value in the diagnosis of pancreatic disease. In rare instances, however, a large amount of diastase is present—more than 500 units per cubic centimeter. This finding strongly suggests disease of the pancreas. The diastatic activity in the urines of persons with normal pancreas varies widely. The estimation of diastatic activity in the feces is of slight value as an aid to the diagnosis of disease of the pancreas. Obstruction of the pancreatic ducts in man results in a low diastatic activity in the feces. The diastatic activity in the feces of persons without pancreatic disease varies widely. The authors suggest that the absence of diastatic activity in conditions in which the pancreas is normal is probably due to complete absorption of the diastase by the intestines.

14. **Suprarenal System and Carbohydrate Metabolism.**—Mackenzie believes he is justified in accepting the following view of the relation of the suprarenal system to carbohydrate metabolism: 1. Nervous stimuli, especially of the sympathetic, represented by piqûre or splanchnic stimulation, are followed by an increased secretion of epinephrin, and this hypersuprarenalinemia like that following epinephrin injections, causes hyperglycemia and glycosuria in part by inhibiting glycogenesis, and in part by furthering glycogenolysis. 2. The hyperglycogenolysis thus produced is dependent partly on a direct stimulation of the liver cells and partly on its action in rendering the receptive material between the sympathetic nerve endings and the liver cells more sensitive to nervous stimulation. 3. Epinephrin does not produce its effects by inhibiting glycolysis, and the disturbances in sugar metabolism following its administration have little or nothing to do with the loss of glycolytic power, which is probably a part of the altered metabolism in diabetes mellitus. 4. A specific physiologic relation between the islands of Langerhans and the suprarenal medulla is unproved. 5. Suprarenalectomized dogs show a diminution of the power to form glycogen from glycose. 6. Following extirpation of the suprarenals in depancreatized dogs there is a rapid disappearance of hyperglycemia. 7. Sugar administered to such animals is neither oxidized nor stored as glycogen, but appears quantitatively in the urine.

15. **Ethylhydrocuprein in Treatment of Lobar Pneumonia.**—As judged from the series of thirty-two cases studied by Moore and Chesney when ethylhydrocuprein hydrochlorid is given by mouth to patients suffering from acute lobar pneumonia in such amounts that they receive at least 0.024 gm. per kilogram of body weight twenty-four hours, and when the size and spacing of the individual doses are adequately regulated, a specific pneumococcidal action appears in their blood within a few hours, and it can be maintained more or less constant for several days. In order to maintain the bactericidal action in the blood at a constant level the intervals between the individual doses given by mouth should not ordinarily exceed about two and one-half to three hours. When ethylhydrocuprein is given by mouth according to a scheme of dosage as outlined, the evidence points to some retention or accumulation in the blood of part of the drug absorbed. Administration of ethylhydrocuprein hydrochlorid by mouth appears to be more satisfactory than intramuscular administration. Pneumococci, not only in vitro, but also in the human body in patients treated with ethylhydrocuprein, may acquire the property of more or less complete resistance or "fastness" to the drug. Toxic symptoms, such as tinnitus, deafness, amblyopia or amaurosis (retinitis) may be observed in the use of the drug in man; they are generally transient. Retinitis, however, may result in more or less permanent impairment of vision.

Arkansas Medical Society Journal, Little Rock

April, XIII, No. 11

16 Information Regarding Correlated Activities of Council of National Defense and Advisory Commission, Medical Departments of Government and Committee of American Physicians for Medical Preparedness. F. F. Simpson, Pittsburgh.—p. 223.
17 Case of Uncinariasis Complicated with Hyperchlorhydria and Pylorospasm. T. M. Fly, Little Rock.—p. 227.

Boston Medical and Surgical Journal

April 26, CLXXVI, No. 17

18 *Comparative Results in Suprapubic and Perineal Prostatectomies. J. M. Gile, Hanover, N. H.—p. 587.
19 *Method of Supporting Bladder in Certain Cases of Cystocele. H. L. Smith, Nashua, N. H.—p. 591.
20 Diagnosis of Extra-Uterine Pregnancy. G. DeN. Hough, New Bedford.—p. 593.
21 Extra-Uterine Pregnancy. R. H. Seelye, Springfield.—p. 595.
22 *Variations in Pulmonary Resonance. G. C. Shattuck, Boston.—p. 599.
23 *Variations in Pulmonary Voice Sounds. W. D. Reid, Newton.—p. 601.

18. **Results in Suprapubic and Perineal Prostatectomies.**—The total number of cases operated on by Gile was 62. Of these, 24 were performed by the suprapubic route and 38 by the perineal. Among the 24 suprapubic operations there were 11 deaths; in the 38 perineal operations there were 4 deaths; a total of practically 24 per cent. of fatalities for all operations, and a fatality of nearly 46 per cent. in the suprapubic cases and 10.6 per cent. for the 38 perineal cases. Of the 47 patients who recovered, there were 42 perfect functional results. Of the five imperfect functional results, one patient had a permanent abdominal sinus, this, of course, being a case of suprapubic operation. Two other suprapubic patients required secondary operation for closure of abdominal sinuses, this procedure giving final perfect result, and so are classed with the 42 functional cures. Of the 5 imperfect results, 2 patients had slight, but permanent, perineal sinuses, leaking occurring only at time of urination. Both, however, were in cases of malignant disease of the prostate. One had rectal

fistula, this also a malignant case. One perineal patient at last report had a partial incontinence of urine, and this was the only nonmalignant case of the perineal service that failed of perfect functional result. In the patients that recovered there were 2—1 perineal and 1 suprapubic—that suffered with very severe infection following the operation. One perineal patient had a severe hemorrhage into the bladder, the blood clotting and giving much difficulty in emptying it, but made final complete recovery. One perineal patient had extensive scrotal infiltration with urine, which persisted for some weeks. One had late stricture, which was permanently relieved by passing sounds. Two patients in the course of recovery developed orchitis of brief duration. Of the 15 cases of death 2 were from exhaustion; 1 patient died of pulmonary embolism forty days after operation, but having a sinus not quite healed; 2 died of suppression of urine and resulting uremia; 3 died of mixed pyogenic infections and 1 of tetanus; 3 died promptly after operation, and are credited to surgical shock; these three were suprapubic operations; 1 died of hemorrhage a week after operation—a suprapubic case; 1 patient a perineal case, appeared to die of dynamic ileus or intestinal stasis; 1 died of persistent vomiting that came on ten days after operation, and the whole clinical picture was that of cancer of the stomach with pyloric stenosis.

19. **Method of Supporting Bladder in Certain Cases of Cystocele.**—Smith's method consists in attaching the uterus to the posterior inferior surface of the bladder, the cervix being sutured firmly to the posterior wall of the urethra, just above and behind the meatus. By this maneuver the bladder pouch is tucked up into the pelvis, and the bladder as a whole rests on the anterior wall of the uterus as on a shelf.

22. **Variations in Pulmonary Resonance.**—According to Shattuck, slight differences in pulmonary resonance below the clavicles in front, and at the apices and bases behind, are common in chests which can properly be regarded as negative from a clinical standpoint. These differences are ordinarily disregarded. They are important when, for other reasons, the existence of pulmonary disease is suspected. Under these conditions they may lead the examiner to believe the disease is more extensive than it is, or they may be a factor in causing him to make diagnosis of phthisis when it does not in fact exist. Shattuck has seen many cases in which the diagnosis of phthisis has been made on insufficient evidence, with resulting hardship to the patient, and the variations of resonance mentioned may have led to errors in this direction. On the other hand, he emphasizes that the variations of resonance are slight, and that the importance of well marked dulness for diagnosis is not in question.

23. **Variations in Pulmonary Voice Sounds.**—The spoken and whispered voice, Reid says, though most often louder at the right apex, is not necessarily so in chests that are clinically negative. The left base may transmit the spoken voice louder in a surprising number of cases. The variations in pulmonary voice sounds do not follow with any degree of accuracy those in pulmonary resonance, save over the right apex. The transmission of the spoken and whispered voice over normal chests presents considerable variation, and this should be clearly appreciated in drawing conclusions as to the presence of pathologic conditions, such as pulmonary tuberculosis, etc.

Cleveland Medical Journal

March, XVI, No. 3

24 Pulmonary Syphilis; Report of Case. R. Dexter, Cleveland.—p. 147.
25 Use of Blood Transfusion. A. B. Eisenbrey, Cleveland.—p. 155.
26 Abdominal Tumor (Papilloma of Ovary) of Unusual Size (180 Pounds). W. E. Lower, Cleveland.—p. 161.
27 Relation of Syphilis to Mental Disease. A. G. Hyde, Cleveland.—p. 163.
28 Influence of Force of Gravity on Circulation. R. J. Schraff, Cleveland.—p. 170.

Indiana State Medical Association Journal, Fort Wayne

April, X, No. 4

29 *Occlusive Drainage for Empyema of Chest, Demonstration of Operation and Instruments. M. I. Rosenthal, Fort Wayne.—p. 135.
30 Roentgen Ray Diagnosis of Mastoid Disease. A. M. Cole, Indianapolis.—p. 139.
31 Infections of Mastoid; Roentgenography and Other Aids to Early Diagnosis. W. F. Clevenger, Indianapolis.—p. 140.
32 Errors in Diagnosis of Diseases of Accessory Sinuses. J. Maurer, Marion.—p. 143.

29. Abstracted in The Journal, Oct. 21, 1916, p. 1251.

Iowa State Medical Society Journal, Des Moines

April, VII, No. 4

33 Hematoma of Abdominal Wall Simulating Intra-Abdominal Accident. W. M. Shirley, Carroll.—p. 138.
34 Fractures of Os Calcis. P. A. Bendixen, Davenport.—p. 140.
35 Case of Complete Circumflex Paralysis. A. M. Evetz.—p. 143.
36 Continuous Sponge. C. A. Boice, Washington.—p. 145.
37 Present Day Surgery of Abdomen. D. W. Ward, Oelwein.—p. 149.
38 Four Cases of Status Epilepticus Treated with Success. W. Held, Chicago.—p. 151.
39 Facts, Fads and Fancies Relative to Medical Practice. P. R. Wood, Cedar Falls.—p. 152.
40 Exhibition Clinical Eye Case. G. F. Harkness, Davenport.—p. 154.

Journal of Laboratory and Clinical Medicine, St. Louis

April, II, No. 7

41 Calcium Sulphid, as Chemical and Clinical Antidote for Mercuric Chlorid Poisoning, with Experiments; Report of Case. J. H. Wilms, Cincinnati.—p. 445.
42 Preliminary Medical Study of Positive Cases Found in First Year's Work of Michigan Tuberculosis Survey. V. C. Vaughan, Jr., Detroit.—p. 459.
43 Spirochetes. H. Noguchi, New York.—p. 472.
44 *Effect of Extensive Venesection and Transfusion on Kidney Lesions in Severe Acute Mercuric Chlorid Poisoning. W. H. Burmeister, Chicago.—p. 500.
45 Recent Advances in Study of Autolysis. M. Morse, Chicago.—p. 506.
46 Pernicious Vomiting without Acidosis Associated with Disturbance of Ammonia Urea Quotient of Blood. H. L. McNeil and M. D. Levy, Galveston, Texas.—p. 509.
47 Use of Fehling's Solution in Determination of Blood Sugar. H. McGuigan, Chicago.—p. 514.
48 Preservation of Erythrocytes of Known Group for Iso-Agglutinin Group Determination. M. G. Wohl, Omaha.—p. 516.
49 Construction of Apparatus Using Structural Steel Toy. S. B. Kleiner, New Haven, Conn.—p. 517.
50 Clarification of Complement in Relation to Its Preservation. N. E. Williamson, Stockton, Calif.—p. 518.

44. **Effect of Venesection and Transfusion on Kidney Lesions.**—Copious venesection followed by transfusion of normal blood according to Burmeister inhibits both qualitatively and quantitatively the characteristic degeneration usually found in the epithelium of the ascending loop of Henle in the kidneys of dogs acutely poisoned by mercuric chlorid. In desperate and other cases of acute mercurial poisoning, venesection followed by transfusion should be practiced in addition to other therapeutic measures now in use. In this way metallic mercury can be removed in vitro from the blood of animals poisoned by mercuric chlorid and this blood qualitatively freed from its corrosive contamination can again be utilized in subsequent transfusions.

Journal of Nervous and Mental Disease, Lancaster, Pa.

April, XLV, No. 4

51 *Anatomic Findings in Case of Progressive Lenticular Degeneration. J. A. F. Pfeiffer, Washington, D. C.—p. 289.
52 Mechanism of Paranoia. E. S. Abbot, Waverly, Mass.—p. 312.
53 Dynamic Psychology and Practice of Medicine. H. D. Singer, Hospital, Ill.—p. 324.
54 *Symptom Complex Associated with Interpeduncular Tumors. H. I. Gosline, Worcester, Mass.—p. 337.

51. **Progressive Lenticular Degeneration.**—The case reported by Pfeiffer presented the essential aspects of the disease described by Wilson as progressive lenticular degeneration. The anatomic changes found are analogous with those described by Wilson. The basal ganglions were most severely diseased, especially that portion of the lenticulate nucleus known as the putamen, in which area an extensive destruction and softening of the tissue occurred. The remaining part of the lenticulate nucleus, and the caudate nucleus, were less severely affected, and the alterations in the cortex were not intense. The pathologic changes were characterized by a degeneration of the neuronic elements, with a compensatory proliferation and hyperplasia of the glial tissue. Many singular morphologic gliogenous variations were exhibited. No evidence of inflammation or pathologic vascular alterations were discovered.

54. **Symptom Complex of Interpeduncular Tumors.**—Gosline cites the case of a man of 30 years who had active symptoms of eight months' duration characterized by drowsiness of such persistence that he lost various positions. He died with signs of interpeduncular tumor. The tumor was made up of undifferentiated anterior lobe cells such as are found in the hibernating animal, and a correlation is suggested between tumors of this sort and the possibility of human hibernation. There was a high incidence of twins in the immediate family of the patient. His organs showed fetal lobulations and other variations from the normal.

Medical Record, New York

April 28, XCI, No. 17

55 Biopsy and Cancer—Review. W. S. Bainbridge, New York.—p. 705.
56 Intravenous and Intraprostatic Injections of Methylphenol and Normal Phenol Serum in Gonorrhea. F. G. Cano, San Salvador, T. M. Townsend and J. J. Valentine, New York.—p. 715.
57 Radium Dosage. J. B. Bissell, New York.—p. 720.
58 Acute Pancreatitis. L. H. Levy, New Haven, Conn.—p. 721.
59 Anxiety About Lumbar Puncture. L. Newmark and W. F. Beerman, San Francisco.—p. 723.
60 Plan for Prevention of Venereal Disease in Our Military Forces. A. L. Wolbarst, New York.—p. 725.

Mental Hygiene, Concord, N. H.

January, I, No. 1

61 Wider Field of Work of National Committee for Mental Hygiene. L. F. Barker, Baltimore.—p. 4.
62 Underlying Concepts in Mental Hygiene. W. A. White, Washington, D. C.—p. 7.
63 Unemployment and Personality—Study of Psychopathic Cases. H. M. Adler, Boston.—p. 16.
64 Insane in County Poor Farm. T. W. Salmon, New York.—p. 25.
65 Growth of Provision for Feebleminded in United States. W. E. Fernald, Waverly, Mass.—p. 34.
66 Mental Adaptation. F. L. Wells, Waverly, Mass.—p. 60.
67 Organized Work in Mental Hygiene. C. W. Beers.—p. 81.
68 What State Hospital Can Do in Mental Hygiene. W. L. Russell, White Plains, N. Y.—p. 88.
69 Subnormal Child—Survey of School Population in Locust Point District of Baltimore. C. M. Campbell, Baltimore.—p. 96.

Missouri State Medical Association Journal, St. Louis

April, XIV, No. 4

70 Discussion on: Should Asymptomatic Individual with Positive Wassermann Be Treated? M. E. Engman, St. Louis and others.—p. 145.
71 Blastomycosis; Report of Three Cases. W. Frick, Kansas City.—p. 158.
72 Medical Education in Missouri an Ideal. F. G. Nifong, Columbia.—p. 161.
73 Tonsils and Adenoids. J. P. McCann, Warrensburg.—p. 164.
74 Relation of Nasal and Oral Sepsis to Systemic Disease. T. A. Blackmore, Windsor.—p. 166.
75 Everyday Use of Bacterins. C. F. Briegleb, St. Clair.—p. 170.
76 Magnesium Oxid in Treatment of Mercury Poisoning; Report of Cases. E. Schisler, St. Louis.—p. 173.

New York Medical Journal

April 28, CV, No. 17

77 Pneumococcic Peritonitis in Infancy and Childhood. I. A. Abt, Chicago.—p. 769.
78 Some Problems of Differential Diagnosis in Chronic Pulmonary Disease. J. A. Miller, New York.—p. 773.
79 Channels of Infection and Methods of Transmission of Tuberculosis. W. H. Park, New York.—p. 777.
80 Nonsurgical Cures of Exophthalmic Goiter. I. Bram, Philadelphia.—p. 778.
81 Value of Early Vaccine Treatment of Pneumonia. G. H. Sherman, Detroit.—p. 781.
82 Circumcision of Tonsil. F. G. Murphy, Mason City, Iowa.—p. 785.
83 Obstetric Paralysis; Review of Its Mechanism and Outlook for Its Relief. H. W. Wright, San Francisco.—p. 788.
84 Municipal Birth Control Clinic. M. H. Kahn, New York.—p. 790.

Pennsylvania Medical Journal, Athens

April, XX, No. 7

85 Disposition of Ligaments in Hysterectomy. S. E. Tracy, Philadelphia.—p. 461.
86 *Conservative Treatment of Puerperal Sepsis. E. E. Montgomery, Philadelphia.—p. 465.
87 *Roentgenotherapy in Gynecology. F. E. Keene, Philadelphia.—p. 469.
88 *Attitude of Department of Labor and Industry Toward Problem of Occupational Disease. J. P. Jackson, Harrisburg.—p. 472.
89 Cranial Nerve Syphilis; Technic of Treatment. F. Eastman, Erie.—p. 478.
90 Use of Prisms in Ophthalmic Practice. J. E. Willetts, Pittsburgh.—p. 483.
91 Use of Ethylhydrocuprein in Diseases of Eye. W. Zentmayer, Philadelphia.—p. 487.
92 Symptoms of Empyema of Maxillary Sinus; Simple Operative Method for Its Relief. J. J. Sullivan, Jr., Scranton.—p 491.
93 Status of Lingual Tonsil and Its Surgery. J. A. Babbit, Philadelphia.—p. 495.
94 Exaggerated Importance of Blood Pressure. R. Parker, Norristown.—p. 503.
95 Industrial Injuries to Eyes. W. C. Posey, Philadelphia.—p. 504.
96 Treatment of Acute Anilin Poisoning and Various Derivations Incident to Its Manufacture. J. C. Lyons, Marcus Hook.—p. 509.
97 Vesical Calculus Incarcerated in Vagina. E. Lyon, Williamsport.—p. 510.
98 Case of Mercurial Poisoning. F. L. Marsh and W. A. Marsh, Mount Pleasant.—p. 510.

86. Abstracted in The Journal, Nov. 4, 1916, p. 1396.
87. Abstracted in The Journal, Oct. 28, 1916, p. 1328.
88. Abstracted in The Journal, Nov. 4, 1916, p. 1394.

Rhode Island Medical Journal, Providence

April, I, No. 4

99 Industrial Accident Compensation Legislation; Medical Phase. F. I. McCanna, Providence.—p. 83.
100 Decadence in Medical Economics. W. L. Harris, Providence—p. 92.
101 Case of Gangrenous Arthritis of Knee of Diabetic Origin. J. C. Rutherford, Providence.—p. 98.

Surgery, Gynecology and Obstetrics, Chicago

May, XXIV, No. 5

102 *Hypospadias and Its Treatment; a New Operation. C. Beck, Chicago.—p. 511.
103 *Pernicious Anemia with Special Reference to Its Surgical Management. N. M. Percy, Chicago.—p. 533.
104 Cancer of Large Bowel. G. E. Armstrong, Montreal, Canada. p. 545.
105 Cancer of Stomach. C. H. Peck, New York.—p. 549.
106 Cancer of Breast. W. Meyer, New York.—p. 553.
107 *Transplantations of Ectopic Pregnancy from Fallopian Tube to Cavity of Uterus. C. J. Wallace, Duluth, Minn.—p. 578.
108 Present Status of Roentgenotherapy in Management of Deep-Seated Malignancy. J. T. Case, Battle Creek, Mich.—p. 580.
109 Present Status of Roentgenology in Management of Deep-Seated Malignancy. G. E. Pfahler, Philadelphia.—p. 588.
110 Hernia Through Triangle of Petit; Report of Case. J. H. Rishmiller, Minneapolis.—p. 589.
111 Sterility in Female. M. T. Goldstine, Chicago.—p. 592.
112 Sterility in Male. L. E. Schmidt, Chicago.—p. 594.
113 Id. V. D. Lespinasse, Chicago.—p. 597.
114 *Tuberculosis of Spine; End Results of Operative Treatment. M. S. Henderson, Rochester, Minn.—p. 600.
115 *Carcinomatous Ovarian Teratoma with Premature Puberty and Precocious Somatic Development. R. H. Harris, Battle Creek, Mich.—p. 604.
116 *Operative Treatment of Pes Cavus; Stripping of Os Calcis. A. Steindler, Iowa City, Iowa.—p. 612.
117 Unique Case of Injury of Elbow Joint. P. W. Davis, Portland, Maine.—p. 615.
118 Lateral Double Loop Suture for Fatty or Infected Abdominal Walls. A. Schwyzer, St. Paul.—p. 617.
119 External Urethrotomy; Its Technic. J. F. McCarthy, New York. p. 619.
120 *Plastic Operation on Fallopian Tubes for Production of Temporary Sterility. C. Culbertson, Chicago.—p. 622.
121 Conduct of Third Stage of Labor. H. K. Gibson, Chicago.—p. 625.

102. **Hypospadias and Its Treatment.**—Beck's method is a flap method with the extensive use of the prepuce. He has observed fifteen cases for a period of from one to eight years each. They have been almost normal in appearance and function.

103. **Pernicious Anemia and Its Surgical Management.**—Percy has operated in thirty-seven cases of pernicious anemia, but this report includes only the first twenty-four cases, in which the elapsed interval since the operation has been six months or more. The regions in which foci were found were the gallbladder, the appendix, and the mouth and throat. In twenty of the twenty-four cases, chronic cholecystitis, with or without stones, was present, seventeen of which also presented evidence of previous inflammation of the appendix, and six of this group also had marked infection in or about the teeth, and one had infected tonsils. Four cases had marked evidence of a subacute infection in the appendix. In one patient the only focus found was in the teeth. From the last nine cases bacteria were grown from three of the nine spleens removed, from four of the seven gallbladders removed, and from six of seven appendixes removed. The only case not giving a bacteriologic growth, was one in which the spleen

was the only specimen removed, the appendix having been previously removed. This patient had had a long standing pyorrhea, for the relief of which a number of teeth had been extracted. No culture was made from the mouth. The predominating micro-organism found was the hemolytic streptococcus, being obtained in seven of the nine cases, the colon bacillus in five, the *Streptococcus viridans* in four, the *Staphylococcus albus* in one.

Splenectomy, cholecystectomy and appendectomy were done in seventeen cases; splenectomy, cholecystostomy and appendectomy in one case; splenectomy and cholecystectomy in two cases; splenectomy and appendectomy in three cases; splenectomy alone in one case. In this one several teeth were extracted later, as well as the tonsils removed in one other case. Teeth were also extracted in five other cases. Transfusion was done routinely on the table immediately at the close of each operation. There were two operative deaths; 8.3 per cent. One of these patients died on the twelfth day from uremia, the other about sixteen hours after operation, apparently from some form of blood crisis beginning about five hours after operation. One patient showed practically no improvement, but had relief from mental and gastric symptoms for four weeks, at the end of which time the symptoms recurred, the spinal cord symptoms progressed rapidly, and the patient died at the end of ten weeks. The other twenty-one, or 87 per cent., were markedly improved. Two patients had recurrence of symptoms at the end of four months, death at eight months. One died from an accident four months after operation, with blood count nearly 5 million. Four patients had recurrence of symptoms just about six months after operation; interval of these now since operation, eight, nine, ten and eleven months, respectively. The other fourteen, or 58 per cent., are all clinically in good condition, the interval since operation being as follows; three about seven months; two, eight months; two, nine months; one, ten months; one, fourteen months; two, fifteen months; one, eighteen months; one, twenty-three months, and one, thirty-two months. This latter case, at the end of two years and eight months is clinically perfectly well and carries no evidence of pernicious anemia in her blood, except that an occasional normoblast can be found. In every case except one in which recurrence of the disease has occurred, the patient presented mental, nervous or spinal cord symptoms at the time they came under treatment, and in most of them, these symptoms occurred early in the disease. From observations of these cases it would seem that in all cases of pernicious anemia with involvement of the spinal cord and central nervous system, the prognosis is extremely bad under any form of treatment, and the patients should not be operated on.

107. **Transplantation of Ectopic Pregnancy.**—In an early case in which the tube is still in a healthy condition, not too badly distended, and all things favorable, Wallace thinks a supreme attempt should be made to save the life of the growing child by opening the tube carefully and dissecting out the pregnancy intact and transplanting it into the uterus. This can be very quickly done. It does not endanger the life of the mother and may be her only chance to bear a child. In support of this theory Wallace reports a case which will show without doubt that it can be done. The pregnancy went on normally to full term and resulted in the natural birth of a fully developed child.

114. **Tuberculosis of Spine.**—In the Mayo Clinic, from July, 1912, to July, 1916, 274 cases of tuberculosis of the spine were observed. Eighty-one patients were operated on, seventy-four according to the method of Albee and seven according to the method of Hibbs. The oldest patient was 53, the youngest 2. Only seven were under 12 years of age. The disease was located in the lumbar region in thirty-four instances, in the dorsal in thirty-six and in the dorsolumbar in eleven. The average duration of symptoms was two years and six months. There were no deaths due to the operation. Seven patients of the series are known to have died some time after the operation. Seventy-three cases, therefore, are the basis of Henderson's percentages. Thirty-one patients (42.4 per cent.) are cured. Thirty-three patients (45.2 per cent.) are classified as relieved, though no doubt some of this group will go on to a cure when sufficient time has elapsed. Although there were no operative deaths, seven of the seventy-three patients (9.5 per cent.) are known to have died later; two of these had been cured of the tuberculosis of the spine. Henderson concludes that neither the Hibbs nor the Albee type of operation for ankylosing the diseased area in tuberculosis of the spine is in any sense a radical operation for extirpation of the focus of disease. Patients submitted to these procedures should be in good general condition. Paraplegia per se is not a contraindication. These procedures in themselves are not serious. A proper selection of patients will give a high percentage of cure and considerably shorten the period of treatment.

115. **Carcinomatous Ovarian Teratoma.**—Harris' patient was only 5 years and 10 months old. The growth of the tumor was associated with the beginning of puberty at 5 years of age and with rapid bodily development. The tumor was a complex cystosolid teratoma with definite adenocarcinomatous areas. There has been no menstruation since the removal of the tumor, and no further precocious growth. The first menstrual period appeared when the patient was 5 years old. The second period began two months later and was followed at regular intervals of four weeks by five other menstrual periods. Each period lasted one week, and was accompanied by profuse menstrual flow and by pain in the lower abdomen. The physical changes usually observed at puberty began to be noticed soon after the first menstrual period. The breasts grew larger, the areolae darkened, the pubic region became covered with dark brown hair, hair appeared in the axillae, and the whole body developed rapidly. The growth of the ovarian tumor was well advanced by the time of the third menstrual period, seven months before operation, when its presence was discovered by the family physician. There was no discoverable recurrence when the patient was examined thirty months after removal of the tumor.

116. **Operative Treatment of Pes Cavus.**—The lower surface of the os calcis is stripped by Steindler entirely to its anterior edge where the short flexors of the toes and the abductors of the first and fifth toes are inserted together with plantar fascia.

120. **Plastic Operation to Produce Temporary Sterility.**—The procedure described by Culbertson involves the fimbriated end of the tube only, and is performed by transposing the infundibulum beneath the round ligament into the anterior culdesac, and then closing off the anterior culdesac by a transverse ventrosuspension of the uterus, employing the round ligaments throughout their entire length, from the inguinal ring on one side to the inguinal ring on the other.

Tennessee State Medical Association Journal, Nashville

April, IX, No. 12

122 Trend of Times in Medicine and Surgery. C. N. Cowden, Nashville.—p. 463.
123 Trachoma. A. F. Richards, Sparta.—p. 470.
124 Tubercular Peritonitis. R. A. Barr, Nashville.—p. 477.
125 Hernia. E. H. Baird, Dyersburg.—p. 481.

Vermont Medicine, Rutland

April, II, No. 4

126 Tardy Pain of Stomach. A. H. Bellerose, Rutland.—p. 85.
127 Hernia of Urinary Bladder. A. P. Heineck, Chicago.—p. 92.

West Virginia Medical Journal, Huntington

March, XI, No. 9

128 Aggravated Coryza—So-Called Grippe. G. A. Aschman, Wheeling.—p. 313.
129 Pathogenesis of Some Nonpsychogenetic Types of Functional Nervous Disorders. T. A. Williams, Washington, D. C.—p. 316.
130 Roentgen Rays in Diagnosis. W. C. Moser, Morgantown.—p. 320.
131 Study of Arsenic Compounds in Chemotherapy of Tuberculosis. A. Arkin, Morgantown.—p. 329.

April, No. 10

132 Prodigal Sister. W. C. Slusher, Bluefield.—p. 353.
133 Indications for Operation in Head Injuries. A. McGlannan, Baltimore.—p. 355.
134 Case of Multiple Fibrocystic Tumor of Endometrium. A. S. Grimm, St. Marys.—p. 357.
135 Report of Several Cases, Showing Results Obtained in Treating Pathologic Lesions of Deep Male Urethra with Aid of Modern Urethroscope. O. D. Barker, Parkersburg.—p. 358.
136 Methods and Results in Surgery of Stomach and Intestine. G. W. Crile, Cleveland.—p. 365.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

Edinburgh Medical Journal

April, XVIII, No. 4

1 *Fragilitas Ossium and Its Association with Blue Sclerotics and Otosclerosis. E. Bronson.—p. 240.
2 Two Cases of Congenital Superior Radio-Ulnar Synostosis. D. M. Greig.—p. 281.
3 Laparotomy under Local Anesthesia. J. M. Graham.—p. 284.

1. **Fragilitas Ossium.**—A description is given by Bronson of two families with hereditary fragility of the bones associated with gray-blue sclerotics, and in one family with otosclerosis also. A summary of the literature of these peculiarities in relation to fragilitas ossium is presented, together with a general discussion of the whole subject, case reports of the congenital type, and a bibliography. In the first family, consisting of fifty-five individuals in four generations, twenty-one had gray-blue sclerotics. Of these twenty-one, only one, a 6 year old boy, who survived infancy, has had no fractures. The number of fractures in any individual is not excessive, and they require a certain amount of force for their production. Sprains and dislocations are also common. The majority of adults are in good general health, and are able to do ordinary work. The mortality among infants with blue sclerotics is in this family greater than among those not affected. The heads of those individuals in this family who have blue sclerotics and bone fragility show an abnormal prominence of the frontal and occipital bones. In two of them there is a history of patency of the fontanel throughout life. Of eight adults with blue sclerotics and fractures, seven had varying degrees of deafness, the eighth died at 23 without deafness. In the second family, consisting of eight individuals in three generations, seven have blue sclerotics, and four of these have had fractures; two others have a tendency to sprains. All are able to lead an ordinary life, except one child, which is somewhat crippled and incurs fractures too easily to be able to run and play. In this family the head has the characteristic shape frequently seen in osteogenesis imperfecta congenita, namely, increase in the bitemporal diameter, so that the ears are turned outward and downward, slight downward tilting of the axis of the eyes, and an underhung lower jaw. There is no tendency, as in the first family, to deafness, nor any to arterial sclerosis. In both families the stature of those affected is below the average, with the exception of three members of the first family.

Indian Medical Gazette, Calcutta

March, LII, No. 3

4 Gunshot Wounds of Abdomen (During Siege of Kut). C. H. Barber.—p. 81.
5 Cataract Operation Old and New. M. Corry and R. H. S. Bahadur.—p. 90.
6 Influence of Beriberi on Body Weight. J. Mulvany.—p. 98.
7 Surface Tension and Wassermann Reaction. V. Nesfield.—p. 99.
8 Prevention of Sepsis in Cataract Extraction. H. Herbert.—p. 100.

Journal of Tropical Medicine and Hygiene, London

April 2, XX, No. 7

9 Disposal of Town Refuse. J. T. Clarke.—p. 73.

Lancet, London

April 14, I, No. 4885

10 War Surgery of Abdomen. C. Wallace.—p. 561.
11 Importance of Diagnosis of Enteric Fevers by Agglutinin Determinations. E. W. A. Walker.—p. 568.
12 *Easy and Rapid Method of Detecting Protozoal Cysts in Feces by Means of Wet-Stained Preparations. R. Donaldson.—p. 571.
13 *Toxic Symptoms After Use of Bismuth Paste. F. A. Hepworth.—p. 573.
14 Relation of Structure to Function as Seen in Mechanism of Venous System. F. W. Jones.—p. 574.
15 Immediate After-Treatment of Guillotine Amputation Stump. H. F. Woollenden and J. Campbell.—p. 576.

12. **Detection of Protozoal Cysts in Feces.**—A mixture of equal parts of the two stains used in any of the three following combinations Donaldson found will yield the best results. A. Five per cent. aqueous solution of potassium iodid saturated with iodin to which is added an equal volume of ether. B. (1) A saturated aqueous solution of rubin S; or (2) a saturated aqueous solution of eosin; or (3) Stephens' scarlet writing fluid. A few loopfuls of one of the above stain combinations are placed on a clean slide, a loopful of feces taken and rubbed up with the stain to form a fairly smooth suspension, and a clean cover slip gently lowered over the drop. The cysts stand out as brilliant yellow or greenish-yellow spheres, which even the veriest tyro cannot miss seeing. Such cysts have a very sharply defined outline which in the case of coli and histolytica cysts appears, in the rubin S combination, using daylight as the illumination, as a sharp deep purple ring. In the case of other cysts this well recognized outline is not so deeply colored, although it is still tolerably sharp. The nuclear structures in the cyst stand out as prominently as with the old simple iodin method. In cases in which the light is too strong, it may be necessary to close the iris diaphragm slightly to bring the nuclei into relief.

13. **Toxic Symptoms After Use of Bismuth Paste.**—Five men were found by Hepworth to show symptoms suggesting plumbism, and although under the care of different surgeons and in different wards, all alike suffer from severe septic wounds and all were treated by the application of bismuth and iodoform paste, according to Morison's technic.

Bulletin de l'Académie de Médecine, Paris

April 3, LXXVII, No. 14, pp. 425-480

16 *Prophylaxis of Syphilis. Gaucher and others.—p. 433.
17 The Fissured or Grooved Tongue as Sign of Syphilis. (La langue fissurée ou fendillée, son origine syphilitique ou hérédo-syphilitique.) Gaucher.—p. 437.
18 *The Hygienic Meal. (Des repas à 2 plats et 2 desserts devant l'hygiène.) E. Maurel.—p. 442.
19 Oil-Ether Mixture for Dressing Wounds. G. Duchesne.—p. 451.
20 *System of Writing for the Blind. A. Cantonnet.—p. 453.
21 Apparatus for Compound Fracture of the Long Bones. Prat and P. Reynier.—p. 459.

16. **Prophylaxis of Syphilis.**—The Académie adopted the following six resolutions presented by a committee headed by Gaucher: "The Académie, alarmed by the rapid progress of syphilis, insists with emphasis: 1. On the necessity for letting young men know that chastity is not only possible but recommendable and salutary, and letting married men know that it is their duty from the point of view of *morality* and of hygiene to avoid chance intercourse. 2. On the absolute necessity for medical examination of military contingents and laborers from the colonies, before they embark for France, and also after their arrival in France, and for medical inspection of colonial workmen every fortnight in the factories where they are employed. 3. On the necessity for strict observance by the police of the ordinances relating to hotels and furnished rooms. The proprietors must insist on the tenants registering their name and civil position whether they rent a room for the night or even during the day. 4. On the necessity for strict enforcement of the ordinances against soliciting and severe repression of the penal offense *racolage* (crimping). 5. On the necessity for informing men who might succumb to temptation that it is indispensable for them to use preventives. 6. On the absolute necessity for entrusting the diagnosis and treatment both in military and civilian circles exclusively to physicians known to be competent, and on the necessity for extension of training in syphilography." In speaking to the question before the vote, Gaucher related a number of instances where men with various other skin affections had been erroneously treated for syphilis. One soldier with scabies for more than a year had spent three months of the year in the hospital, taking treatment for nonexistent syphilis, and returned to his service with his still unrecognized, untreated and uncured scabies. In another instance, typical recent syphilis in a prostitute long escaped detection under weekly medical inspections.

18. **The Hygienic Meal.**—Maurel for some years has been affirming that the general health would be better if the average healthy adult would confine himself to two dishes at noon and eve, one from the animal and one from the vegetable kingdom, with two desserts, balanced in the same way, fruits from the vegetable kingdom and cheese, creams, etc., from the animal. With soup at one meal and 350 gm. bread during the day this ration represents 2,445 calories, 35 per kilogram. He gives a menu showing the variety that can be secured with this ration, and compares it with orders recently issued by the

authorities in France forbidding all hotels, restaurants, diners and other public eating places from serving more than two dishes at a meal, one of meat, with soup, one entrée, cheese and one dessert dish. Cooked or raw vegetables are to be counted as a dish when they are served separately, not as garnishes. The bill of fare for one meal must not comprise more than two soups and nine dishes, namely, one dish of eggs, and choice from two dishes of fish, three dishes of meat, and three dishes of vegetables. The menu each day has to be submitted to the officials if required. Maurel declares that these new regulations, which went into effect in February, are directly in line with what he has been advocating for some years as the rational and hygienic table.

20. **Writing for the Blind.**—The advantage of the method described by Cantonnet is that it can be read by those who see as well as by the blind. The letters are punched dots, but they are arranged in the shape of the ordinary capitals and are thus easily read by anyone. They are punched through a tin ruler which has two rows of slits arranged in groups of three, and the dots are punched through these slits. The letter H, for example, is made with three dots in each of the outer slits and one dot in the center of the middle slit. If a carbon paper is placed under the writing paper, the punched through dots show up plainer. They can be read from the dots or by holding the back of the paper in front of a mirror. Samples of the writing are given, and an illustration of the tin ruler with its two rows of sixteen groups of slits; thirty-two letters can thus be written before the ruler has to be moved down. The method does not compete with the Braille, but supplements it by providing a means of communication with the seeing.

Paris Médical

March 24, VII, No. 12, pp. 229-244

22 The Auscultation Method of Using the Sphygmomanometer: Technic and Findings. L. Tixier.—p. 229.
23 Treatment on the Firing Line of Wounds ot the Chest. Schwartz.—p. 235.
24 *Camphor Treatment of Trench Foot. (Pied de tranchée.) V. Raymond and J. Parisot.—p. 238.
25 Training the Crippled by Outdoor Games and Sports. Moreau-Defarges.—p. 241.

March 31, No. 13, pp. 245-260

26 Electrodiagnosis in War. J. Cluzet.—p. 246.
27 Medicated Paraffin Film Treatment for Frostbite and Burns. (Traitement des "gelures des pieds" et des brulures.) F. Rathery and L. Bauzil.—p. 249.
28 *Localized Muscular Rigidity as Sign of Impending Gangrene. (Le signe de Prat.) J. Fiévez.—p. 250.
29 *Continuous Aspiration in Treatment of Infected Wounds. A. Grimberg.—p. 253.

24. **Treatment of Trench Foot.**—Raymond and Parisot state that further experience has confirmed their assumption that the so-called trench frostbite is an infection from some fungus germs, normally in the soil, which acquire pathogenic properties for man under long standing in cold water. Similar affections can be induced in animals by submitting them to stagnation and wet cold. Conditions are like those in Pasteur's experiments with chilled hens. Treatment based on this etiology has given good results, especially dressing the foot with cotton dipped in a mixture of 1.1 gm. pulverized camphor; 15 gm. sodium borate and 1,000 gm. boiled water. Among the 1,093 cases in Africans, October to January, there were four deaths from septicemia or tetanus, but 95 per cent. were cured without a mutilating operation. Of the 232 Arabs, none died and 95 per cent. were cured without an operation. Of the 891 French soldiers, all but fifty returned to active service in from three to five weeks and only five required an operation. Only two had to be discharged from active service.

28. **Sign of Impending Gangrene.**—Prat has called attention to a peculiar rigidity in the muscles after an injury of the limb which he says is a warning of impending gangrene. Fiévez reports several cases in which this sign: hardness of the leg below traumatic injury, persisted until gangrene developed. It is evidently a sign of ischemia, and the ischemia is the result of injury of some large blood vessel above. Necrosis and gangrene almost inevitably follow this muscular rigidity ischemia, and the board-like hardness of the muscles is their precursor. It consequently should turn the scale in favor of amputation in doubtful cases. Theoretically, this pregangrenous ischemic rigidity is capable of retrogression, but in reality it must be regarded as an actual segmental cadaveric rigidity. Conservative surgery is perilous in these conditions. The rigidity further serves to limit the doomed from the sound muscles or group of muscles.

29. **Aspiration Treatment of Wounds.**—Grimberg introduces the rinsing fluid (Dakin solution) into the wound in a continuous flow and aspirates it below by the simple device of a jar with the tube entering the stopper and a tube and faucet below. As the fluid in the jar flows off through the lower tube, the vacuum left aspirates the fluid in the wound. The ends of the tubes in the wound are wrapped with cotton and gauze, tied in place, and the aspiration continues automatically for hours at a time.

Presse Médicale, Paris

March 15, XXV, No. 16, pp. 153-160

30 *Importance of Oxygen in Treatment of Carbon Monoxid Poisoning. (L'instabilité de l'hemoglobine oxycarbonée en présence d'oxygène.) M. Nicloux.—p. 153.
31 The Lesions in Rectum and Colon with Amebic Dysentery. J. Carles and Froussard.—p. 154.

March 22, No. 17, pp. 161-176

32 Primary Malaria in Macedonia and Treatment. P. Abrami.—p. 161.
33 *Abscesses and Eschars from Subcutaneous Injections of Quinin. L. Moreau.—p. 164.
34 Perforation by Scrap of Shell of Stomach Protruding through a Congenital Hernia of the Diaphragm. S. Mercadé.—p. 166.
35 *Barium Sulphate in Gelatin for Roentgen Work. R. Bensaude and M. Terry.—p. 168.
36 *Molar Tooth Sign of Inherited Syphilis. R. Sabouraud.—p. 169.

30. **Treatment of Carbon Monoxid Poisoning.**—Nicloux is professor of chemistry at the University of Paris. He here reiterates that the traditional idea that a red corpuscle once choked with carbon monoxid is a dead corpuscle, is no longer tenable. The corpuscle is not dead; all it needs is oxygen under sufficient tension to displace the carbon monoxid in it. His research has demonstrated that 1 volume of carbon monoxid acts like 220 volumes of oxygen. Hemoglobin in contact with one part carbon monoxid in 220 parts oxygen, takes up equal parts of each, half of the hemoglobin becoming oxygenated, the other half carbon monoxidated. Air contains only 21 per cent. oxygen, so that the proportion would have to be 1:1,000 when air instead of pure oxygen is used. The practical conclusions from the data presented are that when a person suffering from carbon monoxid poisoning is made to breathe pure oxygen as soon as possible, actual resurrection may ensue. In animals deeply intoxicated with carbon monoxid, nearly the whole had disappeared from the blood by the end of an hour of oxygen breathing.

33. **Quinin Abscesses and Eschars.**—Moreau comments on the number of severe abscesses and eschars developing after subcutaneous injections of quinin in the Macedonian campaign. Intramuscular injections seem to be less dangerous from this standpoint. Others have reported severe injury of the sciatic nerve from intragluteal injections of quinin. To be safe, the injection should be made three fingerbreadths outside of the posterior superior spine of the ilium, on a level with the spine.

35. **Simplification of Technic for Roentgen Examination of Digestive Canal.**—Bensaude and Terrey extol the advantages for Roentgen examination of finely pulverized barium sulphate in a 50 per cent. gelatinous vehicle. It forms a velvety cream without any tendency to precipitation of the metal for several hours or days.

36. **Isolated Tooth Sign of Inherited Syphilis.**—Sabouraud for five years has been studying a certain anomaly in the first large molars in the upper jaw, which he has found only in children and other persons giving a positive response to the Wassermann test. He hence regards it as a sign of inherited syphilis, and it often is the only sign to call attention to it. Normally, each cusp of a tooth corresponds to a root, but in the molars in question there seems to be a supernumerary cusp on the inside of the tooth. It forms a protuberance more or less pronounced, and he has discovered it often when the teeth otherwise seemed free from syphilitic stigmata. He calls it the *eminence mamillaire de la face interne des premières grosses molaires supérieures,* and relates instances

in which it gave the clue to specific and effectual treatment. His illustrations show teeth with this rudimentary cusp, with views of normal teeth and of the well known types of other syphilitic dental anomalies.

Progrès Médical, Paris

March 31, XXXII, No. 13, pp. 101-108

37 Microbian Infections of the Scalp. (La teigne amiantacée d'Alibert, etc.) Gougerot.—p. 101.
38 Gas Gangrene. R. Dumas.—p. 102.

April 7, No. 14, pp. 109-122

39 Symptoms Following Injury of Both Median and Ulnar Nerves. M. Loeper and G. Giraud.—p. 109.
40 *Psychotherapy in Wartime. G. L. Duprat.—p. 113. To be continued.
41 No Dressings after Aseptic Operations. A. Chalier.—p. 116.
42 The Effects of the Nervous Strain of Trench Life. (Le cafard.) P. Voivenel.—p. 117.

40. **Psychotherapy in Wartime.**—Duprat states that the rôle of psychiatry has been singularly enlarged by the number and variety of mental pathologic conditions during the war. The war has also emphasized the importance of neurology, but he warns that while waiting for time to heal certain nervous affections there is danger of atrophy from disuse. The neurologic centers should be equipped for exercises and the physiologic play of body and mind. Reeducation is as important, often, as any operation. The concussions and commotions of the war usually aggravate or accelerate preexisting pathologic conditions. Consequently the symptoms induced are out of all proportion to the apparent cause. The latter reveals the extent of a latent ill, such as a brain tumor, sclerosis, tabes, degeneracy, progressive paralysis, etc. The mental confusion that follows shell shock soon disappears when the soil is healthy. He insists on the necessity for early correction of contraction and paralysis, before they become inveterate, and describes the means for this and other fields of psychotherapy.

Correspondenz-Blatt für Schweizer Aerzte, Basel

March 31, XLVII, No. 13, pp. 385-416

43 *Gastroptosis and Gastropexy. E. Bircher.—p. 385.

43. **Gastroptosis and Gastropexy.**—Bircher lists the symptoms with gastroptosis as gastric discomfort and pains and constipation, the latter liable to entail nervous disturbances of all kinds, especially pains in various parts of the abdomen and particularly in the sacral region. Headache is also common, and lack of appetite; the loss of weight from inadequate intake of food may turn the scale in favor of the erroneous diagnosis of malignant disease. The pains in the stomach are worse during the day, especially when much on the feet, and they subside on reclining. The pain with ptosis is more to the left than with ulcer, as a rule, and it depends more on the quantity than on the character of the food. Bircher warns, however, that gastroptosis predisposes to ulcer, and may accompany it or cholelithiasis, stenosis of the pylorus, or myasthenia. Actual hysteric stigmata are rare with pure ptosis, but nervous disturbances are common. In women who have borne children, the ptosis is due to loss of elasticity in the abdominal walls and ligaments, and constipation dominates the clinical picture. In the virginal type, the tendency to ptosis is aggravated by pressure from corsets, etc., forcing down the organs below the diaphragm and thus dragging down on the esophagus, ligaments, vessels and nerves. Pain and vomiting are the main symptoms; the ptosis and the constipation are not very pronounced. This type benefits better from gastropexy than the maternal gastroptosis. Gastroplication, shortening the lesser omentum, gives good results at first, but then the omentum stretches and the previous condition returns. Gastro-enterostomy is absolutely contraindicated with gastroptosis. He tried it on a patient with supposed gastric ulcer, but the young woman vomited incessantly afterward and succumbed to inanition in two months. Necropsy confirmed the existence of two ulcers in the duodenum, but the stomach sagged down into the small pelvis, thus closing the gastro-enterostomy opening. In a second similar case he opened the abdomen, resected the gastro-enterostomy opening, and fastened the stomach in place, thus curing the patient completely.

He has applied gastropexy in 62 cases, and reports that 67.7 per cent. were cured and 20.9 per cent. improved. Only 9.6 per cent. failed to derive benefit, aside from 1.6 per cent. who had died. In 42 reexamined recently after over a year or more, only 4.1 per cent. were not improved or cured, outside of 2.6 per cent. who had died. Those who were *not* improved had had their disturbances so long that complete restitution was out of the question, and only this or that symptom was mitigated. In 6 cases he fastened the liver in place at the same time. When spasm of the pylorus was part of the clinical picture, he slit the pylorus lengthwise and sutured the lips together again crosswise. In the 11 cases in which this was done it proved a complete success. In 6 cases there was a complicating ulcer, and in 2 he resected the ulcer before the gastropexy and in 4 others applied gastro-enterostomy. He warns most urgently that in doing gastro-enterostomy, if there is the slightest tendency to gastroptosis, the operation should conclude with gastropexy. Gastroptosis predisposes further to the arteriomesenteric occlusion so dreaded by surgeons. In 3 of his cases gallstones complicated conditions.

He somewhat modifies Rovsing's technic for gastropexy. Rovsing draws the stomach out through a median incision and makes an interrupted suture in the serosa, parallel to the lesser curvature, and reaching up close to the pylorus. Then, parallel to this, other rows of sutures are taken, at intervals of 2 cm. The ends of the suture threads are brought out through the abdominal wall to the left. The abdominal incision is then sutured and closed with collodion. The ends of the suture material are tied over a glass plate covered with gauze. He scarifies both stomach and wall before taking the sutures. Bircher's modification consists in carrying the suture material around the right costal arch or directly under it through the skin, and he does not carry the middle and lower lines of sutures quite so far to each side. The ends of the threads are brought out at a distance of 4 to 3 cm. from their entering points, and are tied over glass drains wrapped in gauze. By this modification, the stomach is fastened in its proper place and shortened in length at the same time. Rovsing has a record of 163 personal cases and has reported 93 by other Scandinavian surgeons, the outcome being a complete cure or improvement in all but about 12 per cent., except for 4.8 per cent. who have died since.

Gazzetta degli Ospedali e delle Cliniche, Milan

March 1, XXXVIII, No. 17, pp. 257-272

44 *Primary Cancer of the Peritoneum. B. Quarella.—p. 257.

March 4, No. 18, pp. 273-288

45 *Infectious Spirochete Jaundice. G. B. Bonini.—p. 273.
46 Vaccine Therapy of Recurring Staphylococcus Pustular Affection. (Sulla cosidetta malattia di Colles, Graves, Jaccoud.) P. F. Arullani.—p. 278.

March 8, No. 19, pp. 289-304

47 Symptoms from Foreign Body in Pleura. S. Gangi.—p. 299.
48 Necessity for Examining the Throat of Every Sick Child. A. De Blasi.—p. 301.

44. **Cancer of the Peritoneum.**—The two cases reported by Quarella were typical examples of diffuse malignant peritoneal epitheliomas. One patient was a man of 49 and the symptoms were those of abdominal cancer in general, with death a month after the first symptoms had attracted attention. The second patient was a young man, healthy until 1903 when digestive disturbances and enlargement of the abdomen with other symptoms suggested tuberculous peritonitis. He was tapped several times, and under medical treatment left the hospital much improved. He returned two years later with ascites and a pleural effusion, and again was transiently improved by paracentesis. On recurrence of trouble, laparotomy was done and the peritoneum found studded with nodules which seemed to form a primary miliary carcinosis. A course of Roentgen treatment was given and, contrary to expectations, great improvement followed and persisted for six years, with earning capacity restored. Then there was further trouble, and again benefit followed a laparotomy, the man returning to work for another year. A third laparotomy the following year showed the neoplastic nodules somewhat increased in size. After a period of improvement, severe abdominal pains and profuse ascites

followed. The young man died in 1916, thirteen years after the first symptoms. He had had seven laparotomies done, and his earning capacity had been maintained nearly to the last. Quarella says that he is unable to explain the long survival of over twelve years after the malignant disease had been diagnosed beyond question. The necropsy findings in both cases are described and are compared with those from similar cases in the literature.

45. **Infectious Jaundice.**—In Bonini's experience with what he calls icterohemorrhagic spirochetosis, he obtained little benefit from treatment with mercury or arsenic. Better results were noted with serum from convalescents and immunized goats, but only before the jaundice had appeared. After this stage the patients are able to produce their own protecting or immunizing substances. Hence treatment then is merely symptomatic, stimulating the elimination of bile and waste by drinking freely of alkaline waters and eating food that has not had the vitamins destroyed by boiling.

Pediatria, Naples

April, XXV, No. 4, pp. 193-256

49 *Vaccine Therapy of Diphtheric Paralysis. S. Maggiore.—p. 193.
50 *Vaccine Therapy of Malta or Undulating Fever. G. Caronia.—p. 199.
51 *Hydrocele in Infants. R. Vaglio.—p. 212.
52 Monosymptomatic Form of Scurvy in Infant. S. de Stefano.—p. 227.

49. **Vaccine Therapy of Diphtheric Paralysis.**—Maggiore describes the encouraging improvement in a boy of 6 with paralysis of both legs and one arm, coming on about a month after recovery from diphtheria under antitoxin. The movements of the neck were also restricted, and the head drooped forward, but there was no pain. He was treated with electricity, massage and nux vomica, and was given injections of a vaccine made with an emulsion of diphtheria bacilli in diphtheria antitoxin inactivated at 55 C. The dose was 2 c.c. at a time, a total of 6 c.c. at intervals of a few days. The paralysis began to improve at once, and there were no symptoms of intolerance or anaphylaxis. The factors involved in the effect of this serovaccine must be those on which active immunity is based, as nothing else seems able to explain it.

50. **Vaccine Therapy in Malta Fever.**—In the eight cases in adults and children the benefit from the vaccine made by Caronia's method was marked, and no by-effects were noted on intramuscular injection. In two of the cases the vaccine was given intravenously; it then induced a moderate febrile reaction.

51. **Hydrocele in Infants.**—Vaglio calls attention to the frequency of hydrocele in infants with inherited syphilis, saying that it often seems to be the only manifestation of the inherited taint. In eighteen of the fifty-five cases summarized there was a history of syphilis in the family and in eleven it was probable, but in twenty-six cases there was nothing to suggest syphilis. The hydrocele in the scrotum causes no disturbance and usually subsides spontaneously.

Policlinico, Rome

April 1, XXIV, No. 14, pp. 437-471

53 Thoracentesis for Hemothorax after War Wound of the Lung. L. Longo.—p. 437.
54 Importance of Laryngostomy for the Sequels of Wounds of the Larynx and Trachea. G. Ferreri.—p. 441.
55 False Teeth for the Soldiers. (Gli sdentati nell-esercito.) A. Perna.—p. 445.
56 Salvarsan and Its Substitutes in Abortive Treatment of Syphilis. G. Piccardi.—p. 448.

March, Surgical Section No. 3, pp. 97-144

57 *Mycosis of the Throat. (Studio clinico-sperimentale sulla cosidetta blastomicosi.) G. Basile.—p. 97. Commenced in No. 2, p. 88.
58 *Invagination of Movable Cecum and Appendicitis. O. Cignozzi.—p. 120.
59 *Operative Treatment of Primary Echinococcus Disease of the Lung. G. Mariotti.—p. 129.
60 Traumatic Hernia of the Brain. O. Tenani.—p. 142. To be continued.

57. **Blastomycosis of the Throat.**—Basile here concludes his long study of a case of blastomycosis of the throat in which he was able to cultivate from the lesion a fungus previously unknown in Italy. It resembles that of the oropharyngeal zymonematosis that has been described in Brazil.

58. **Ileus from Invagination of Movable Cecum.**—Cignozzi describes a case of ileus in a child of 12 for which chronic appendicitis seemed to be indirectly responsible. It maintained irritation which led to the invagination of the cecum in the colon. After appendicectomy, he took up folds in both cecum and colon to reduce them to normal dimensions and fastened the cecum to prevent its moving about.

59. **Primary Echinococcus Disease of the Lung.**—Mariotti reports a case in which he operated on the lung of a soldier for echinococcus disease. He emphasizes the advantages of his method of operating at two sittings. The lesion was in the lower lobe of the right lung. The man had had a great deal to do with dogs, and the radiogram confirmed conclusively the diagnosis. The contrast between the good general condition and the severe pulmonary affection aided in excluding tuberculosis. Spontaneous cure is exceptional, and local injection of drugs is contraindicated for various reasons. He obtained access to the lesion by resecting the seventh, eighth and ninth ribs, suturing the lung and pleura with a crown of stitches to the wall to prevent the retraction of the lung, and also outline the field of operation. It was tamponed and the skin sutured over this. The second operation followed two days later. No attempt was made to remove the cyst membrane in the lung as it was adherent and fragile.

Riforma Medica, Naples

March 17, XXXIII, No. 11, pp. 281-308

61 *Italy in the Progress of Science. (Rivendicazioni italiche: tubercolosi.) A. Ferrannini.—p. 281.
62 Successful Anastomosis between Median and Brachial Nerves after Resection of Sarcoma. R. Minervini.—p. 284.
63 Factitious Affections Induced to Simulate or Aggravate the Results of War Wounds. A. Mori.—p. 288. To be continued.
64 *Traumatic Paralysis of Reflex Origin. P. Boveri.—p. 294.
65 Extrameningeal Manifestations of Meningococcus Infection. A. Ferrannini.—p. 295.
66 Ictero-Albuminuric Spirochetosis and Relapsing Fever. U. Gabbi.—p. 297.

61. **Italian Contributions to Progress of Science.**—Thumbnail sketches with portraits are given here of Italians who have advanced materially our knowledge of tuberculosis. The list includes Fracastoro, in the sixteenth century, who preached that tuberculosis was spread from man to man; Maffucci whose determination of the endotoxins of bacteria was the basis for production of tuberculin; Grocco and Bozzolo in 1893 and 1900 who preceded Poncet in describing tuberculous rheumatism and tuberculous stenosis of the pylorus; Forlanini, with artificial pneumothorax; Maragliano, with serotherapy of tuberculosis, and F. Durante who has been extolling since 1876 the value of iodin in treatment of tuberculosis. Barellai in 1853 and Castaldi five years later appealed to the authorities to found seashore and mountain sanatoriums for the tuberculous.

64. **Traumatic Paralysis of Reflex Origin.**—Boveri remarks that cases of paralysis and contracture of traumatic reflex origin are now encountered in every military hospital that cares for nervous affections. The diagnosis is easy but the pathogenesis is obscure. Prolonged disuse of the limb after the trauma is unmistakably one of the factors, interfering with the nutrition and elasticity of the muscles. This entails in time the trophic and vasomotor disturbances and the changes in the response to the electric current. These phenomena are comparatively transient and subside under proper treatment. But when the vascular apparatus is injured, the resulting lesions are practically permanent.

Revista de la Asociacion Medica Argentina, Buenos Aires

March, XXVI, No. 148, pp. 143-278

67 *Echinococcus Disease of the Liver. (Le kyste hydatique multivésiculaire du foie.) F. Dévé.—p. 143.
68 *Injection of Phenol in Treatment of Hemorrhoids. E. Escomel.—p. 167.
69 *Varicocele in the Female. C. A. Castaño.—p. 179. Commenced in No. 147, p. 76.
70 *Gastric and Duodenal Ulcers. R. Finochietto.—p. 210.
71 *History of Bubonic Plague. A. M. del Pont.—p. 242. To be continued.
72 Mercury Cyanid Intravenously in Treatment of Dysentery. Varsi.—p. 277.

67. **Echinococcus Disease.**—Dévé affirms that, in the young, hydatid cysts, even very large ones, have no daughter cysts in from 90 to 100 per cent. of the cases. This is because the echinococcus disease is of comparatively recent date, and the cyst has not been subjected to as many vicissitudes as is the rule in older persons whose affection is of longer standing. For this reason the echinococcus cyst in the young is round and elastic, and cholemia is rare. Spontaneous suppuration is exceptional, but the cyst in the liver may rupture into the peritoneum. The immediate results are mild, but the echinococcus disease develops secondarily in the abdomen. A hydatid cyst should never be punctured but should be operated on without any delay. Physicians should strive to diagnose these cysts in children and young people, especially in countries where they are rare. It is more than probable that many cases of echinococcus disease in adults date from childhood. The liver is involved in about 75 per cent. of all cases, and the lung in 9 or 10 per cent. The gravity of the disease left to its natural evolution and the relative mildness with an early operation should be impressed on the public, and parents instructed to watch for any bulging of the abdominal wall.

68. **Treatment of Hemorrhoids.**—Injection of a 20 per cent. solution of phenol in equal parts glycerin and distilled water cauterizes and obliterates the hemorrhoid. The phenol acts as an anesthetic, so no other anesthetic is required. From two to six drops is the capacity of each hemorrhoid, as a rule, and the procedure is within the reach of any physician. Much inflammation contraindicates this method of treatment as it would prove too painful. The patient can return to his business in a few hours afterward. This method is by all means the best nonsurgical measure at our command, Escomel reiterates. He gives an illustration of the speculum, small clamps, and bent syringe with straight or bent tips he uses for the purpose.

69. **Pelvic Varicocele.**—The first part of Castaño's article was reviewed in these columns, April 14, p. 1151. He appeals for causal treatment of disturbances which are too often labeled hysteria and disregarded, when correct treatment would relieve the women from years of discomfort, pain and secondary nervous disturbances. The predisposed are those with slightly deficient thyroid functioning and a tendency to congestions in general. The four main symptoms are dysmenorrhea of the ovarian type, menorrhagia, dyspareunia and serous or watery vaginal discharge. The pain is mostly a sense of oppression in the abdomen, a dragging down sensation, increased by standing, walking, dancing, and relieved by reclining. The pains grow worse as menstruation approaches while the vaginal discharge becomes profuse. As menstruation sets in the pains are relieved. Dyspareunia is also pronounced, the pain during coitus being probably due to varicose periphlebitis involving the nerves. There is also liable to be bladder and rectum tenesmus, with chronic constipation. The varicose enlargement of the veins can be palpated better as the patient stands. Those in the broad ligament are most often affected, especially on the left side. Symptoms from deficient thyroid functioning form part of the clinical picture. Women with this tendency to congestion in the pelvis are often multiparas. The varicocele may be mistaken for chronic appendicitis and metritis; although the discharge with the latter should differentiate it. Left untreated, the repeated congestions and the compression from the varicocele are liable to injure the ovaries and set up inflammation in the pelvis. Treatment should aim to reduce the tendency to congestion, and for this he gives thyroid treatment, preparing the patient for it with a course of alkalines, 10 or 20 gm. a day of sodium bicarbonate, taken with the meals, for three or four days, with some alkaline mineral water. He gives thyroid tablets one every other day for a week at bedtime, then one every day and then two every day for the third week, and then rests a week. If this treatment brings the expected benefit, he continues with larger doses, regulating the habits to ensure a tranquil hygienic life, avoiding meat, as this, he says, "attacks the thyroid." A supporting abdominal band is often useful.

70. **Gastric and Duodenal Ulcers.**—Eighteen illustrations accompany this analysis of forty-six cases of gastric or duodenal ulcer given operative treatment in Finochietto's service within the last two years. The past history seemed to be more instructive than the naked eye or microscopic aspect of the lesions in the ulcer and cancer cases; none of the cancer cases had the long pathologic past of the ulcer cases. A cholecystogastrostomy was done in one case of duodenal ulcer, and the outcome was as good as after simple gastro-enterostomy. Necropsy in one case several months after a gastro-enterostomy showed that the mucosa of the stomach had evidently been injured by the clamps, the marks left by them being still visible, with loss of substance.

71. **History of Bubonic Plague.**—Del Pont remarks that the ancient writers on the plague, wishing to make their descriptions more moving, exaggerated greatly, certain chronicles giving the numbers of the dead in figures double or triple the total number of inhabitants of the place at the time. Others copied into their descriptions accounts from other epidemics which had little if anything in common with them. In this installment of his study of the plague through the ages, he brings it down to the eighth century.

Semana Medica, Buenos Aires

XXIV, No. 3, pp. 57-84

73 Bimalleolar Fracture from Traumatic Adduction. M. Jorge, Jr. —p. 57.
74 Phlegmon of the Larynx; Four Cases. A. Quadri.—p. 67.
75 *Lymphocytosis in Syphilis.* C. P. Mayer and A. C. Gourdy.—p. 79. Continuation.

No. 4, pp. 85-120

76 *Surgery of the Pituitary Body. E. V. Segura.—p. 85.
77 *Lymphocytosis in Syphilitics.* C. P. Mayer and A. C. Gourdy.—p. 113. Continuation.

76. **Surgery of the Pituitary Body.**—Segura's long study of this subject is illustrated. He urges prompt removal of a tumor in the pituitary body as soon as it is diagnosed, and reports his experience in five operative cases. The preferable mode of access is the inferior nasal, and the only difficulty is the possibility of anomalies in the sphenoidal sinus which make it hard to locate the point where the dura mater over the sella turcica should be opened. The results were highly satisfactory in his five patients. In one the operation revealed syphilitic lesions in the sphenoidal sinus and the operation was interrupted and specific treatment applied, with complete subsidence of all disturbances in time. Two of the patients who were nearly blind recovered practically normal vision after removal of the pituitary tumor. Menstruation had been suspended for two years in one case but reappeared after the operation, the dates corresponding with the date of the latter during the six months since. These seem to be the first operations on the pituitary body in South America.

Mitteilungen a. d. med. Fakultät der k. Univ., Tokyo

February, XVI, No. 3, pp. 445-605. In German

78 *Hypertrophy of Right Ventricle as Consequence of Paralysis of the Diaphragm. (Hat die Zwerchfelllähmung die Hypertrophie der rechten Herzkammer zur Folge?) K. Kure and T. Hiramatsu.—p. 445.
79 *The Tonicity of the Diaphragm and the Splanchnic Nerves. (Zwerchfelltonus und Nervi splanchnici.) K. Kure, T. Hiramatsu and H. Naito.—p. 483.
80 *Physiologic Importance of the Pericardium. M. Yamada.—p. 527.
81 *Functions of the Thymus. (Ueber die Funktionen der Thymusdrüse vom Standpunkte ihrer Ausfallserscheinungen.) Y. Tongu.—p. 539.

78-79. **Paralysis of the Diaphragm and Its Effect on the Heart.**—Kure and Hiramatsu conclude from the experimental research reported and their clinical experience that the hypertrophy of the right ventricle observed so often in beriberi, along with paralysis of the diaphragm, is secondary to the latter. They emphasize that the movements of the diaphragm are regulated by the phrenic nerve, while its tonicity is determined by the sympathetic nervous system, and consequently in studying the functioning of the diaphragm the excursions and the tonicity should be investigated separately.

80. **The Pericardium.**—Yamada removed more or less of the pericardium from the hearts of dogs but the heart seemed to adapt itself to this and no apparent injury resulted.

81. **The Thymus.**—Tongu has done considerable work in experimental transplantation of the thymus, and now reports

research on the disturbances which followed thymectomy in forty dogs from ten litters. Four plates accompany the article, and the details of the various experiments are tabulated. He warns that suppuration of the wound and intercurrent pneumonia, etc., may induce disturbances liable to be mistaken for thymus deficit symptoms. He was unable to detect any influence from the thymus on the weight of the body nor on the production and destruction of blood corpuscles. After thymectomy the alexin action seems to be lacking. But it is a question whether the thymus shares in the production of alexins or merely produces some substance which promotes the alexin action of the blood serum. No influence from the thymus on the blood pressure was apparent, and no difference in callus production between the normal and the thymectomized dogs.

Russkiy Vrach, Petrograd

XVI, No. 1, pp. 1-24

82 Semicentennial of Medical Mutual Aid Society. N. Y. Chistovich.—p. 1.
83 *Reflex Pain after War Wounds of Peripheral Nerves. (Causalgia Weir-Mitchell'a.) A. E. Yanishevsky.—p. 8.

No. 2, pp. 25-48

84 Suggestions for Improving Surgical Work on the Firing Line. N. N. Petroff.—p. 25.
85 Treatment of War Fractures of the Humerus. A. P. V. Syanozhentsky.—p. 31. Commenced in No. 1, p. 13.
86 *Resection for Cancer of the Stomach. B. K. Finkelstein.—p. 35.
87 Case of Milky Ascites with Leukemia. V. V. Trophimoff.—p. 41.
88 *Alcohol as Disinfectant and Insecticide. N. D. Arkhipiants.—p. 43.

83. **Reflex Pain from War Wounds.**—Yanishevsky says that causalgia must be treated by removal of the cause, of course, but that this has to be followed usually by other measures, and chief among these is hydrotherapy, wet packs or compresses. Galvanic baths may also prove useful, and massage with passive exercises are indispensable if there is danger of ankylosis of the joint. Psychotherapy is a valuable adjuvant, not in the form of ignoring the patient's complaints, but in isolating him from everything liable to annoy or worry him, and impressing on him confidence in a complete cure in time if he will be patient under his puzzling affection. Four cases are described in detail; in one a number of operations had been done, but the causalgia constantly returned after a transient period of improvement. Even injection of alcohol to block the nerve gave only transient benefit. Cestan and Descomps have reported excellent results from Roentgen exposures in recent cases. Leriche has also cured cases by peripheral sympathectomy, that is, denuding the corresponding artery over a certain stretch by removing its sheath of network of sympathetic fibers. But even this is not always successful. Massary applied it in a case with only partial success and this only transient.

86. **Cancer of the Stomach.**—Finkelstein advocates resection of the stomach, and reports twenty-three cases of clinical recovery after resection of the malignant growth, but in only two of the cases are the patients known to be living five and eight years later. Eight others were in good health at last accounts after intervals of from one to three years. Eleven have succumbed to recurrence since, the survival being from six months to three years. The outcome in the other cases is not known. Seventeen patients succumbed to postoperative peritonitis or other complications. Less than a third of all his gastric cancer cases were in an operable condition when first seen. He compares the clinical data in his cases with those published by Ochsner, Mayo and others, totals of 1,290 and 2,063 cases. It seems from the figures cited that in 28 per cent. of all the fatal cases of cancer the malignant disease is located in the stomach. In about 50 per cent. of the cases the cancer is at the pylorus, and in about 10 per cent. on the site of an ulcer. In about two thirds of the cases the tumor can be palpated. In about 2 per cent. of the cases of gastric cancer the patients are under 30, but in only one of his forty operative cases was the patient under 30, namely 28. She had had symptoms for seven months, and died from peritonitis. He advises Billroth's second method as the preferable technic, but even with this the operative mortality ranges from 9 to 67 per cent. and the permanent recoveries from 0 to 25 per cent.

88. **Alcohol as Disinfectant and Insecticide.**—Arkhipiants comments on the contradictory statements in regard to the sterilizing power of alcohol. Koch denied that it had any sterilizing power as it did not kill anthrax spores left in it for 110 days. On the other hand, Fürbringer, Frank and others extol its sterilizing power, but differ widely in the concentration deemed most effectual. Arkhipiants applied it in sterilizing articles in the so-called Japanese sterilizers, and found that, when used instead of solution of formaldehyd, and in quantities four or five times larger than the usual amount of solution of formaldehyd, germs were killed as effectually. He found alcohol of 70 or 80 per cent. strength best adapted for the purpose. The germs used in the tests were cholera vibrios, typhoid and colon bacilli and staphylococci, all on silk threads. They were all killed with the alcohol fumes exactly as in parallel tests with solution of formaldehyd. He does not give any further details of his tests in this preliminary communication, but says he will publish them in another article in the near future.

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89 *Gritting the Teeth as Sign of Adenoids. (Tandenknarsen.) C. E. Benjamins.—p. 444.
90 Favus not due to Achorion Schönleini. D. Muijs.—p. 449.
91 Influence of a Localized Focus in Brain on Conception of Figures, Space and Time. W. van Woerkom.—p. 455.
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95 *Simple Means to Make Graduated Pipets for Serologic Reactions. M. Van Riemsdijk.—p. 517.
96 *Classification of Goiters. O. Lanz.—p. 533.
97 Taenia Nana. C. L. de Jongh.—p. 541.
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99 The Percentage of Accidents and the Factory Physician. J. A. Korteweg.—p. 597.
100 Isolated Dislocation of the Cuneiform Bone of Wrist. (Afzonderlijke ontwrichting van het os triquetrum.) N. Voorhoeve.—p. 615.
101 Tumor in the Spine. (Gezwel van de wervelkolom.) H. Bolten.—p. 619.

89. **Gritting of the Teeth in Connection with Adenoid Vegetations.**—Benjamins states that in his experience with 250 cases of adenoids in India and 526 at Utrecht, as also in the experiences of others, comprising a total of 1,544 adenoid cases, a tendency to grit the teeth was manifest in from 25 to over 40 per cent., an average of 34.1 per cent. In his own experience the average was 37.2 and 34.6 per cent. In his 776 cases there was snoring in over 60 per cent.; enuresis in 29 per cent.; aprosexia in 34.6 per cent., and disturbances in hearing in 42.7 per cent. In 153 operative cases of adenoids, the gritting of the teeth stopped after the removal of the adenoids, and in fourteen it became much less, but it persisted unmodified in fourteen. Examination of 1,654 schoolchildren showed gritting of the teeth in 13.6 per cent. The number of adenoid cases among them was not known, but he is confident that the majority of the teeth gritters will be found to have adenoids. In a series of 115 teeth gritters examined for affections other than adenoids, all but two were found to have adenoids. In 10 of the children the teeth gritting was the only anomaly to attract attention, but a large adenoid was discovered in four.

95. **To Make and Graduate Pipets.**—Riemsdijk gives minute directions for making pipets from a glass tube, filing it into the desired lengths with a three-cornered file, roughening the surface with fine sandstone, and marking off the intervals with a ruler and blacklead pencil, touching over each mark afterward with spirit varnish which makes them practically indelible. She slips the top of each pipet into a segment of rubber tubing to render it easier to handle. By oiling the file it works better on the glass. She also describes ways and means to make and calculate dilutions, suspensions, etc., as she has found most convenient in her work as assistant at the Hygienic-Bacteriologic Institute of the University of Amsterdam.

96. **Classification of Goiters.**—Lanz has had experience with goiters both in Switzerland and Holland, and emphasizes that classification based on the pathologic anatomy is the guide to treatment. In Holland they seem to be of two main types, the atoxic and the toxic. The atoxic group includes the diffuse parenchymatous, diffuse colloid and the circumscribed, nodular, colloid or cystic forms. The toxic type includes the diffuse thyreotoxic, and primary Basedow, and the circumscribed thyreotoxic and secondary Basedow. He describes each type in its clinical manifestations to aid in diagnosis, and warns against abuse of iodin in treatment. It seems strange, he remarks, that nodular goiter has such a toxic action. Possibly the circumscribed nodule serves as a constant irritant for the thyroid. In course of time it may induce a secondary hyperthyroidism. The toxic symptoms do not come from the nodule itself but from its irritated environment. This may set up a vicious circle, but there is no exophthalmos, as a rule, although the cardiotoxic and neurotoxic symptoms are pronounced. The only effectual treatment is the operative, and it need not be extensive; amputation of one side is enough. Bleeding inside the goiter is rare in Holland, but not rare in Switzerland where he had several times to do an emergency thyroidectomy on account of the rapid enlargement of the thyroid from hemorrhage.

He says of the diffuse toxic goiter that it is practically a rudimentary exophthalmic goiter, usually of a vascular type. This is the form observed in telephone girls and teachers, and he has noticed it particularly frequent in doctors' wives, especially country doctors. The country doctor's wife, he remarks, helps in his work, shares his cares and his irregular, hurried mode of life. The thyroid in men is much less sensitive to psychic trauma than in women and girls. In treatment of this form, rest is the first and last word. Worry and emotional stress must be warded off. Sometimes a change of environment is necessary. Phosphorus preparations and arsenic, with bromids are the drugs called for.

Iodin in the cardiotoxic form may have a favorable action in minute doses, but it must not be forgotten that it is a two-edged sword. The dangers from it with all toxic goiters are greater than any eventual benefit. By operative treatment, usually amputation of the most vascular lobe, much time will be gained. Actual pronounced exophthalmic goiter occurs almost exclusively in women, but when it does affect a man the prognosis is much graver. Iodin, thyroid and roentgenotherapy have done more harm than good in true exophthalmic goiter, but resection of the thyroid gives brilliant results. To be safe, we must not let ourselves be tempted to resect too much. Only the lobe most intensely vascularized should be resected or the superior thyroid arteries ligated, as the first step. Iodin triumphs in the cases of diffuse parenchymatous atoxic goiter, either by the mouth or rubbed into the gland in a salve with one part iodin to ten parts potassium iodin and 100 parts petrolatum, but always very cautiously, and under medical supervision. The goiter may increase a little under the influence of the iodin, and it should be suspended then. But these are the cases that respond favorably to iodin. Iodin may help also in the atoxic, knobby, diffuse colloid form, but if no benefit is apparent in four or six weeks it had better be dropped. The operation for this type is unilateral resection, leaving a good amputation stump to be sure to spare the recurrent nerve and parathyroids. The atoxic nodular colloid goiter is the endemic type, and to give iodin with this form, he declares, is malpractice. It does not act on the diseased tissue but only on the still sound tissues. The only treatment here is operative, enucleation or resection or a combination of both.

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March 8, LXXIX, No. 10, pp. 349-408

102 *Eye Disease and Other Disturbances in Infants from Deficiency in Fat in the Food. (Lidelser hos Smaabørn opstaaet paa Grund af Fedtmangel: Xerophthalmia et Dystrophia alipogenetica.) C. E. Bloch.—p. 349. Commenced in No. 9, p. 309.

103 *Case of Veronal Poisoning. F. Fog.—p. 370.

102. **Fat Deficiency Disturbances in Infants.**—Bloch mentions that although xerophthalmia is regarded [illegible] affection, yet he has had forty cases in the last five ye to's Copenhagen. In five cases there was xerosis alone, in t emed seven bilateral keratomalacia, and in seven only in on copic In many of the cases the necrosis of both corneas was ne of There was ulceration in the cornea in nearly every ulcer prolapse of the iris in a number, and displacement of of lens in a few. The little patients were all from a few months to over a year old. Some died from their atrophy and its consequences, some from extension of gangrene from the ulcerating cornea; others recovered. The children presented marked atrophy or dystrophy, the tissues feeling abnormally soft and doughy, edema masking the emaciation, or they showed merely weakness and pallor, but all were backward in development and the skin was dry and dull, scaling off in fine scales. The children all lay quiet and apathetic, and did not like to be disturbed even to be fed, but did not complain if left in peace. The hemoglobin was down to 30 per cent. in some, and was never above 80 per cent. A peculiar susceptibility to infectious processes was evident in the common rhinitis, otitis, furuncles, gangrene or pneumonia. Diarrhea of alimentary origin was frequent.

By exclusion of syphilis, myxedema and other constitutional diseases, Bloch traced this entire set of symptoms to the food the children had been getting; through all the different kinds of artificial feeding ran the evidence of lack of fat. Lack of vitamins may have cooperated, but the exceptionally fat-poor food explains alone the disturbances noted. In nine other cases of xerophthalmia that have been published in Denmark, the preceding artificial feeding had been of this same character, lacking in fat or albumin or both. The majority of Bloch's cases date from the years the war has been in progress; thirty-eight came from rural districts and only eleven from the city. The severe rural cases had all been fed on centrifuged (separator) milk, and this class is the one that has increased so materially in the last year. The parents give the cheapest food, and the cheapest contains the least fat. The disease appeared toward spring, like rachitis, showing the influence of lack of fresh air and sunshine. Treatment consisted in putting the children on breast milk, with local treatment of the eyes. The older children were given milk mixtures besides, and all got teaspoonful doses of cod liver oil. If the children improved under this treatment, he paid no attention to the diarrheic stools, increasing to two or three teaspoonfuls a day. Only a few failed to tolerate the cod liver oil.

He gives details of several cases, with illustrations, man of the children being left blind in one or both eyes. Mori has described in Japan a similar eye affection which ma occur in epidemic form in times of famine, and which yield to cod liver oil. Chicken livers and eel fat have long bee used as domestic measures against it. Mori calls it "hikan" and states that children from 2 to 5 are affected with th xerosis of the conjunctiva and keratomalacia, terminating often in blindness. He had 714 cases in 1899; 313 in 1900, and 400 in 1901. The disease subsides in two or three weeks under cod liver oil without other change in the food. Other fish oils are equally effectual, and the affection is not encountered among fisher families. His communication was published in the *Jahrbuch fur Kinderheilkunde,* 1904. It confirm the view that a deficiency in fat is responsible for the wh set of symptoms. Bloch adds that it seems to be some spec lipoid or lipoids which are involved and which are suppli in cod liver oil, but not in vegetable fats. In conclusion he warns that the true eye trouble is frequently masked by con junctivitis, and that possibly many instances of blindness and leukoma in adults are due to unrecognized xerosis in infancy. The whole trouble is easily cured if taken in time by feeding with breast milk and cod liver oil, or the latter and sweet whole milk.

103. **Cure of Veronal Addiction.**—Fog had a patient who was much debilitated from her constant use of veronal. He gradually substituted antipyrin salicylate for the veronal in the powders she was taking, until she was getting no veronal at all. By this means she was weaned completely from the [illegible] knowledge and without discomfort.

Dr. Robert Fleig Library